ANALYSING THE CHARACTERISTICS AND PERFORMANCE OF ISLAMIC FUNDS: A CRITICAL REVIEW OF THE MALAYSIAN CASE

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ABSTRACT

Analysing the Characteristics and Performance of Islamic Funds:
A Critical Review of the Malaysian Case
by
Mohd Rahimie Bin Abd Karim

This study provides a critical review of the characteristics and performance of Islamic funds in Malaysia with the main objectives of identifying the return and risk profile of Islamic funds and examining the Islamic funds' performance and valuation methods. The study was conceived on the back of the impressive growth of the Islamic fund industry amid abundant evidence and a common perception that Islamic funds generally underperform conventional funds.

The study is designed to address four main areas, namely to analyse the return and risk characteristics of Islamic funds; to examine the performance trend of Islamic funds; to investigate the impact of *Shariah*-compliance requirements on Islamic funds' performance; and, to explore the actual Islamic fund operation by fund management companies through the perception of those involved in the actual practice.

To ensure that the study is undertaken thoroughly, the study employed the methodological triangulation technique, of which, the findings are deduced from three methods of analysis namely literature review, quantitative analysis, and qualitative analysis based on primary data collected through interviews.

The findings of the study are deemed both intriguing and thought provoking. The study found that the existing Islamic funds have been created largely by mimicking conventional funds whilst economic motive, rather than religious motive, is arguably the main reason behind the creation of Islamic funds. Islamic funds are distinguished from conventional funds based on their *Shariah* identities, particularly with regards to stock selection and *Shariah*-compliance supervision. In general, relative to conventional funds, Islamic funds are characterised by a lower return but with higher volatility, have limited numbers of profitable stocks or industries whose returns are strongly and positively correlated, have a smaller fund size and low fund subscription rate, and are mainly invested in heavyweight stocks involved in defensive industries. Interestingly, although the *Shariah*-screening may expose Islamic funds' portfolio to have high investment concentration in small-capitalised stocks, the study found that Islamic funds which invest mainly in large-capitalised stocks could outperform conventional funds and the market index. The analysis of Islamic fund performance is also sensitive to the benchmark used for performance comparison. The study also found that *Shariah* requirements affect Islamic funds' performance adversely by incurring additional *Shariah*-related costs and introducing new *Shariah* non-compliance risks which are peculiar only to Islamic funds. In addition, the study revealed that there is a huge gap in terms of *Shariah* understanding and adoption of *Shariah* principles in the creation of Islamic funds.

It is noted that despite the finding of Islamic funds' underperformance, it can be argued that the evidence does not in any way represent a disadvantage of Islamic funds, considering that the underlying philosophy of the funds is not merely to maximise monetary return, but rather, to attain other non-pecuniary motives including adherence to religious principles and achievement of the objectives of the *Shariah* (*maqasid al-shariah*).

With regards to Islamic fund performance valuation, the study found that the popular methods used by Islamic fund managers are the peer group comparison and the tracking error techniques instead of the traditional risk-adjusted return valuation models.

The study also found that active fund management is probably the best strategy for Islamic funds in Malaysia as compared to the simple buy-and-hold or passive fund management strategy.

ABSTRAK

Menganalisa Ciri-Ciri dan Pencapaian Dana-Dana Amanah Islam:
Satu Ulasan Kritikal Terhadap Kes Di Malaysia
Oleh
Mohd Rahimie Bin Abd Karim

Kajian ini menyediakan ulasan kritikal terhadap ciri-ciri dan pencapaian dana-dana amanah Islam di Malaysia dengan objektif utamanya ialah untuk mengenalpasti profil pulangan dan risiko dana-dana amanah Islam serta memeriksa pencapaian dan kaedah menilai pencapaian dana-dana amanah Islam tersebut. Kajian ini diilhamkan daripada pertumbuhan memberangsangkan dalam industri dana amanah Islam di samping terdapatnya bukti dan tanggapan umum bahawa dana-dana amanah Islam secara amnya tidak dapat mengatasi dana-dana amanah konvensional.

Kajian ini direka untuk menyelesaikan empat isu utama, iaitu menganalisa ciri-ciri pulangan dan risiko dana-dana amanah Islam; menilai trend pencapaian dana-dana amanah Islam; menyiasat kesan kepatuhan *Shariah* terhadap pencapaian dana-dana amanah Islam; dan, menyiasat operasi sebenar dana-dana amanah Islam oleh syarikat-syarikat pengurusan dana amanah.

Untuk memastikan bahawa kajian ini dilakukan sedalam yang mungkin, kajian ini menggunakan teknik kaedah '*methodological triangulation*' di mana dapatan kajian ini diperolehi daripada tiga kaedah analisa iaitu ulasan literatur, analisa kuantitatif dan analisa kualitatif.

Dapatan kajian ini boleh dianggap sebagai menarik dan menyentak pemikiran. Kajian ini mendapati bahawa dana-dana amanah Islam yang ada sekarang sebahagian besarnya dibentuk dengan meniru dana-dana amanah konvensional dengan motif ekonomi, berbanding motif keagamaan, adalah sebab utama dana-dana amanah Islam itu dilancarkan. Dana-dana amanah Islam dibezakan daripada dana-dana amanah konvensional berdasarkan kepada identiti *Shariah* mereka khususnya yang berkaitan dengan pemilihan stok dan penyeliaan keakuran *Shariah*. Secara amnya, berbanding dengan dana-dana amanah konvensional, dana-dana amanah Islam memberi pulangan lebih rendah tetapi dengan volatiliti lebih tinggi, mempunyai jumlah stok dan industri menguntungkan yang terhad dengan tahap korelasi pulangan yang kuat dan positif, mempunyai saiz dana-dana dan kadar langgangan yang lebih kecil, dan pelaburan yang banyak di dalam stok-stok berwajaran tinggi yang terlibat di dalam industri bersifat defensif. Yang menariknya ialah, walaupun tapisan *Shariah* boleh menyebabkan portfolio dana-dana amanah Islam terdedah kepada pelaburan yang besar di dalam stok-stok bersaiz kecil, kajian ini mendapati dana-dana amanah Islam yang melabur terutamanya di dalam stok-stok bersaiz besar mampu mengatasi dana-dana amanah konvensional dan indeks pasaran. Analisa pencapaian dana-dana amanah Islam juga adalah sensitif kepada penanda aras yang diguna sebagai perbandingan pencapaian. Kajian ini mendapati keperluan-keperluan *Shariah* memberi kesan negatif terhadap pencapaian dana-dana amanah Islam kerana ia menyebabkan kos meningkat dan memperkenalkan risiko baru iaitu risiko keingkaran *Shariah* yang hanya wujud pada dana-dana amanah Islam. Tambahan pula, kajian ini mendedahkan adanya jurang yang besar berkaitan dengan tahap kefahaman *Shariah* dan penggunaan prinsip-prinsip *Shariah* di dalam pembentukan dana-dana amanah Islam.

Perlu ditekankan di sini bahawa disebalik dapatan yang menunjukkan kelemahan pencapaian dana-dana amanah Islam, bukti-bukti tersebut tidak boleh dianggap sebagai menunjukkan kekurangan dana-dana amanah Islam setelah mengambilkira falsafah utama dana-dana amanah Islam yang bukan semata-mata untuk memaksimakan keuntungan tetapi juga untuk mencapai motif-motif bukan kewangan seperti kepatuhan kepada prinsip-prinsip agama dan mencapai tujuan-tujuan *Shariah* (*maqasid al-shariah*). Berhubung dengan penilaian pencapaian dana-dana amanah Islam, kajian ini mendapati bahawa kaedah popular yang digunakan oleh pengurus-pengurus dana-dana amanah Islam ialah perbandingan kumpulan sebaya dan teknik menjejak ralat berbanding dengan model-model penilaian tradisional yang berdasarkan pulangan disesuaikan-risiko. Kajian ini juga mendapati bahawa pengurusan dana amanah aktif berkemungkinan adalah strategi terbaik untuk dana-dana amanah Islam di Malaysia berbanding dengan strategi mudah beli-dan-pegang atau strategi pengurusan dana pasif.

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DECLARATION

I hereby confirm that this thesis is a result of my original work. All references, citations or quotes which are not my original work have been duly acknowledged. None of the materials in this thesis has previously been submitted for any other degrees in this or any other university.

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Chapter 1
INTRODUCTION

1.1 INTRODUCTION

This study is motivated by the impressive growth of the Islamic fund industry. Over the last two decades, the asset value of Islamic funds' portfolios has increased tremendously, supported by their ability to generate a rather reasonable rate of return relative to conventional funds. There was also considerable success in the creation and development of Islamic fund products to cater for the increasing needs of the general investing public, thus making Islamic funds a viable investment alternative to conventional funds. Despite this, the Islamic fund industry still has a lot to offer considering that it is a relatively new market amid the continuing interest towards Islamic-based funds worldwide.

1.2 BACKGROUND OF THE STUDY

The interest on ethically-oriented investment, in which investors screen their stocks or securities based upon certain religious, social or personal values; has increased markedly due to the lucrative opportunities fuelled by strong demand, particularly from ethically-concerned investors. The value of ethical investment in the UK is estimated at £6.1 billion in 2010 whilst in the US the value of socially responsible investing (SRI) is estimated at US$3.7 trillion in 2009. Among the fast growing ethically-oriented investment is Islamic-based investment[1] which assets is estimated at between US$200 billion to US$500 billion and continues to grow at an impressive rate of 10 per cent to 15 per cent annually[2]. Though it is a relatively new industry and being significantly outsized by the conventional finance and banking industry, the total asset value of the global Islamic banking and finance (IBF) industry has increased considerably over the last two decades, attracting huge interest beyond its traditional market of Muslim-dominated countries. The substantial growth in the asset value is accompanied by the expansion in

[1] Islamic-based or *Shariah*-compliant investment is defined as investment in stocks or securities that are approved as *halal* (permissible) by the Islamic *Shariah* law.
[2] *The Middle East*. May 2004. p. 37.

IBF's products and services from the traditional finance and banking products into *takaful* (insurance), *sukuk* (bonds) as well as fund management services. In Malaysia, Islamic-based investment has also enjoyed widespread acceptance from general investors. There are currently a total of 871 *halal*-approved securities on Bursa Malaysia Berhad (formerly known as Kuala Lumpur Stock Exchange), representing 85 per cent of the total listed securities, with market capitalisation valued at around 461 billion *Malaysian Ringgit* (RM) (£1 = RM4.90 approximately) or 63 per cent of the overall market capitalisation[3]. The figures clearly indicate the significance of Islamic-based investment and its huge potential in the Malaysian stock market. In addition, the number of *Shariah*-compliant unit trust funds in the country has increased from a mere two equity funds in 1993 to 85 funds currently in operation with a net asset value (NAV) amounting to RM8.6 billion, representing 8 per cent of the total NAV of the Malaysian unit trust industry[4]. Despite this impressive growth however, the market share of Islamic funds, which is about 11.14 per cent of the overall industry's NAV, is deemed relatively small, thus indicating the huge potential of the Islamic fund industry in the country.

Considering that ethically-oriented funds (including Islamic funds) are essentially a type of specialised investment product which is usually offered in parallel with conventional funds, they directly compete with their conventional counterparts in the open market to attract subscription from the general investing public. In this respect, the viability of the ethically-oriented funds is primarily measured based upon their ability to generate satisfactory positive return for investors. Unfortunately however, empirical evidence from past studies suggests that ethically-oriented funds may have to compromise profit in return for holding onto their ethical principles, thus resulting in difficulties for the funds to outperform unrestricted or conventional funds. One hypothesis to explain the ethical funds' underperformance is the *cost-of-discipleship hypothesis* which suggests that there is an opportunity cost incurred when investment is made based on certain (ethical) standards, since ethical screening will deprive ethical funds their choices and flexibilities in asset selection (see Schwab, 1996; Mueller, 1994). In Malaysia, the performance of Islamic funds looks rather unimpressive based on actual published data that shows the long-term return of the existing Islamic funds is below that

[3] Securities Commission. 2006. *Quarterly Bulletin of Malaysian Islamic Capital Market*. Vol. 1. No. 1. May 2006. p. 13.
[4] Ibid. p. 13.

of conventional funds. On the other hand, empirical analyses on Islamic fund performance are deemed limited both in terms of their numbers and scope whilst their results are rather inconclusive. For instance, Yaacob and Yakob (2002), Shah Zaidi *et al*. (2004) and Abdullah *et al*. (2007) claimed that Islamic funds outperformed the market portfolio or conventional funds but a recent study by Nik Muhammad and Mokhtar (2008) has concluded otherwise. Furthermore, Islamic funds are said to outperform conventional funds only during bear market period but underperformed during bull market period as reported by Abdullah *et al*. (2007) and Abdullah *et al.* (2002; cited in Nik Muhammad and Mokhtar, 2008). Among the major reasons for the contradictory findings in the past studies are the differences in the samples of Islamic funds and time period used as well as the prevailing market condition during which the studies were undertaken. With the exception of the study by Yaacob and Yakob (2002) that used hypothetical portfolio, the other studies were based on samples of actual Islamic funds available in the market.

The published data and empirical evidence showing Islamic funds' underperformance implies that religious funds suffer some forms of disadvantage in comparison to conventional funds. However, in view that Islamic funds were created mainly by mimicking conventional funds and handled by similar fund managers, the existing Islamic funds are virtually similar in terms of their structure, operation and investment approach with conventional funds. Therefore, *ceteris paribus*, the observed difference in the performance of the two types of funds may be explained through the impact of *Shariah*-compliance requirements on the portfolio composition of Islamic funds, and the valuation methods used in measuring the performance of Islamic funds. While the composition of Islamic funds' portfolio is by itself a *de facto* interest of this study which will be analysed thoroughly later, it is worthwhile to provide a brief discussion of the suitability of the traditional portfolio performance measurement models to evaluate Islamic funds' performance.

Past studies analysing the performance of Islamic funds such as by Yaacob and Yakob (2002), Shah Zaidi *et al*. (2004), Hussein and Omran (2005) and Abdullah *et al*. (2007) commonly used the traditional portfolio valuation models namely the Sharpe Index, the Treynor Index and the Jensen-*alpha* Index, or their variants. These traditional portfolio performance measurement models have their root from the basic economic

theory of attaining the highest expected utility for an individual economic agent. Beginning with the works by Bernoulli (1738) who argued that the value of an asset should be determined by the utility it yields rather than its price, the research on risk and asset pricing expanded rapidly, driven particularly by the outstanding works of Arrow and Debreu (1954) and Sharpe (1964). However, it was the seminal work on portfolio selection by Markowitz (1952) that underpins the modern portfolio theory. His distinction between the variability of return from an individual security and its contribution to the overall riskiness of a portfolio correctly demonstrates that the efficient way of reducing the risk of a portfolio is by avoiding securities that have high covariances with the other component securities in the portfolio. In other words, the risk of a portfolio can be minimised by investing in securities whose returns are uncorrelated. This intuition gives rise to the concept of efficient portfolio or a set of optimal portfolio that offers the highest possible expected return for a given level of risk, or has the lowest risk for a given level of expected return. Nevertheless, research on portfolio performance valuation theory continues to grow and has benefited particularly from the works by Treynor (1965), Sharpe (1966) and Jensen (1968). Central to the modern financial theory, including the asset pricing theory and the portfolio theory, are the three vital assumptions namely: markets are highly efficient; investors exploit potential arbitrage opportunities; and, investors are rational (see Dimson and Mussavian, 1999). In order to achieve the highest expected utility, an individual investor, acting as a rational economic agent, is assumed to be seeking to maximise profit from his/her investment. Hence, conventional portfolios which are mainly formulated to give maximum return to their investors place more emphasis on selecting the combination of securities that will generate the highest possible return in line with their pre-determined portfolios' objectives or mandates without due concern towards ethical, social or religious motives and they are not subject to any screening obstacles.

Contrary to conventional investment however, a pious or ethically-motivated investor is supposedly looking beyond the mere profit maximisation objectives when investing his/her money. Therefore, in the case of Islamic funds, the attainment of the highest expected utility especially for a pious Muslim investor is not merely achieved through profit maximisation alone but also by submitting to religious obligation. This contention however, should not be construed as demanding pious Muslim investors to be less profit consciousness than conventional investors. Instead, Islam encourages its

followers to create and accumulate wealth as long as the wealth is obtained through legitimate means. Thus, although profit maximisation is allowed in Islam, it should not be perceived as the ultimate objective by Muslim investors that would potentially undermining their other religious obligations, or as the one that will justify *any* means for its achievement. Islamic teachings do not only place emphases on wealth creation and accumulation but are equally concerned with the manner of how the wealth is utilised. With this understanding in mind, it can be argued that the expected utility function of a pious Muslim investor should be different from the utility function of a conventional investor since the former will take into consideration his religious belief and constraints when making an investment whilst the latter's main concern would naturally be about the expected monetary reward from his/her investment merely.

Subsequently, there is a concern that *Shariah* restrictions may have somehow affected the return of Islamic funds unfavourably. By eliminating non-*halal* stocks from their portfolio, Islamic funds will certainly be deprived from enjoying the profit potential offered by non-*halal* securities, thus making the religious funds rather less competitive in terms of their potential return as compared to conventional funds. Moreover, such restrictions also expose Islamic funds to the risk of *moral hazard problem* since Islamic fund managers will be able to conceal their ineffectiveness by citing *Shariah* restrictions as the primary cause for the poor performance of Islamic funds under their management (Wilson, 1997). The *Shariah* constraints raise yet another daunting issue that poses a challenge to Islamic-based investment. In so far as modern portfolio theory is concerned, it has been argued that such restrictions, although religiously or ethically correct, will not be acceptable (see Kurtz, 2005). Under modern portfolio theory, an investor is deemed to be rational and concerned only with the return and risk relationship of the chosen securities in the portfolio, subsequently he/she shall have unlimited choices of assets at his/her disposal whenever he/she intends to diversify that would allow him/her to achieve the optimum mean-variance portfolio. Therefore, putting certain restrictions on the choice of securities would have considerable impact on the analysis of the performance of an Islamic-based investment portfolio since the portfolio arguably might not be able to achieve the status of an optimal portfolio as defined by the Markowitz's theory. Consequently, any results from analysis related to portfolio optimality of Islamic funds under the framework of the modern portfolio theory should be interpreted cautiously.

The appropriateness of using the standard portfolio performance valuation models that have obviously failed to take into account the ethical and Islamic funds' objectives and investment constraints may be questioned on two important grounds. First, the traditional portfolio performance measurement models developed under modern portfolio theory have their roots in the utility maximisation theory – based on the premise that investors will always attempt to maximise their positive return and minimise risk. The maxim that a rational economic agent is only concerned with maximising monetary return however, has been seriously challenged by McKenzie (1977), Cullis *et al*. (1992), Anand and Cowton (1993), Mackenzie and Lewis (1999), and Beal *et al*. (2005) who assert that some investors are equally motivated by factors other than just maximising monetary return. In this respect, Islamic and ethical fund investors are categorised as the group of investors whose investment objectives also include the pursuit of certain religious or ethical values in addition to higher monetary return. Moreover, such diverse characteristics are not exclusive to individual investors *per se* since ethical funds, as suggested by Mallin *et al.* (1995), also possess some unique characteristics, rendering a direct comparison between the performance of ethical funds and stock market benchmarks somewhat misleading (see Hussein and Omran, 2005: 106).

Secondly, argument against the standard portfolio valuation models lies in the inability of the traditional models to take into account the non-pecuniary motives of ethical and Islamic funds as well as their investors. Since the standard models, in their original constructs, are merely concerned with monetary return and risk and deliberately ignore the existence of other investment objectives, the models are incapable of giving due consideration to the impact of incorporating ethical or religious values in portfolio performance. Such limitation is admitted by Sharpe (1994: 50) when he states that:

> ... when such considerations **[i.e. the difference in portfolios' objectives]** are especially important, return mean and variance may not suffice, requiring the use of additional or substitute measures. (clarification is researcher's)

Similar criticism was also made by Basso and Funari (2003: 521) when they claim that:

> ... the traditional performance indicators for financial portfolios cannot take into account both objectives **[i.e. (1) to satisfy an ethical need; and (2) to obtain a satisfactory return]** since they assume by definition that the only aspect to assess is the investment return, which should have the highest expected value with the minimum risk. (clarification is researcher's)

To conclude, this study is particularly motivated by the tremendous growth of the Islamic fund industry. The demand for Islamic funds remains strong despite published data showing that the long-term return of the religious funds is generally below the return of conventional funds. Hence, it is apparent that the attractiveness of Islamic funds is not entirely due to its profit potential, rather, investors subscribing into Islamic funds are also driven by other non-pecuniary motives. Empirical results from past studies on Islamic fund performance are rather inconclusive. The majority of the studies have applied the three traditional portfolio performance measurement models, namely: the Sharpe Index, the Treynor Index and the Jensen-*alpha* Index, or their variants. However, the fact that the standard models consider only return and risk elements of an investment has raised serious doubts on the suitability of the traditional portfolio valuation models for evaluating ethical or Islamic funds. This is in view that both ethical and Islamic funds are principally created to achieve certain socially- or religiously-oriented objectives in addition to generating positive return for their investors whilst their performance is not only vulnerable to various risks similar to conventional funds but also subjected to the constraints imposed by their portfolio mandates. Consequently, the traditional portfolio performance valuation models based upon the mean-variance framework may not be capable of measuring the performance of ethical and Islamic funds accurately since they may produce biased results against ethical and Islamic funds. Therefore, the findings from previous studies derived from the traditional portfolio valuation models, particularly those alleging that ethical or Islamic funds are unable to outperform conventional funds or market index, amid the disadvantages of the funds such as the reduced investment asset universe, additional monitoring costs and the lack of diversification benefits, may be misleading and should be interpreted cautiously. This point is made clear by Gregory *et al*. (1997) when they argued that the observed underperformance of ethical funds measured using the Jensen-*alpha* Index is not surprising given the ethical portfolio's high concentration of investment in small-capitalised stocks. In this respect, thorough investigation is needed to determine the return and risk characteristics of Islamic funds and to improve the assessment methods of the funds.

1.3 RESEARCH AIMS AND OBJECTIVES

There are two primary aims of this study, namely to explore and analyse the performance of Islamic funds in the case of Malaysia by employing econometrics modelling whereby to contribute positively to the development of the Islamic fund industry by exploring the means to further enhance the assessment methods of Islamic funds. In addition, this study aims to critically examine the outstanding issues relating to the performance of Islamic funds through the perception of the fund managers by reflecting on the actual performance and practice.

The main objectives of this study are:

(i) To examine the return and risk characteristics of Islamic funds thoroughly using a hypothetical portfolio consisting entirely of *Shariah*-compliant stocks listed on the Malaysian stock market;

A thorough analysis of the return and risk characteristics of Islamic funds will address the issue of whether the return of Islamic funds is justified, or otherwise. The analysis will also unlock the issues surrounding Islamic funds' underperformance. Since the return and risk characteristics of Islamic funds are determined based upon the analysis of a hypothetical *Shariah*-compliant portfolio instead of actual unit trust or mutual funds, this study is able to control the risk of sample-bias resulting from selecting performing or underperforming Islamic funds which, in turn, results from the differences in their fund managers' investment skills or operational efficiency. Therefore, the results obtained from the *Shariah*-compliant hypothetical portfolio are anticipated to be unbiased results, through which, the actual return and risk characteristics of Islamic funds can be established.

(ii) To analyse the performance trend of Islamic funds using a hypothetical *Shariah*-compliant portfolio;

This study attempts to examine whether Islamic funds' performance exhibits certain recognisable trends as reported by previous studies. The analysis is important as it will reveal the performance trend of Islamic funds, through which, the nature of Islamic

funds' return and their potential can be better appreciated. A hypothetical portfolio is suggested for this study because, unlike past studies using existing Islamic unit trust or mutual funds, its performance is not subjected to external influences such as fund managers' superior trading skill or pre-determined investment objectives that affect the stock selection process. Therefore, more robust and independent results of the performance of Islamic funds can be achieved by this study.

(iii) To conduct interview surveys with fund/investment managers of fund management companies in Malaysia on issues pertaining to the handling of Islamic funds and their perception towards the nature and performance of Islamic funds; and

The survey is vital as it provides primary data on the actual operations and performance of Islamic funds. The focus of the interview survey includes the structure and characteristics of the existing Islamic funds, the handling of the funds, the factors affecting Islamic fund performance, the *Shariah*-compliance practice and the current valuation methods used by Islamic fund managers. The survey will also indicate the level of satisfaction amongst Islamic fund managers towards the performance of their Islamic funds vis-à-vis conventional funds, and their views of how the *Shariah*-compliance requirements affect the operation and investment decision-making process of their Islamic funds. More importantly, the interview survey offers fresh insights, seriously lacking in the existing literatures related to Islamic fund performance, of Islamic funds' operation from the perspective of the industry practitioners.

(iv) To investigate the current practice of fund performance valuation specifically for Islamic funds and explore the possibility of improving Islamic fund valuation techniques.

In view that the traditional portfolio performance valuation models were derived based upon certain economic theories that totally ignore the ethical or religious values, the standard models are presumed to be biased against ethical or religious funds due to their failure to give due recognition to ethically- or religiously-conscious investors for their willingness to accept less than optimal portfolio in favour of their religious or ethical

belief, or to forgo the excess return that they may potentially earn by investing in non-ethical or *haram* (forbidden) securities. Therefore, this study attempts to examine the current fund performance valuation techniques and the perception of Islamic fund managers towards the compatibility of the traditional portfolio performance measures for evaluating Islamic funds. The study also intends to investigate the existence of any additional variables that could influence Islamic fund performance and address the issue of whether Islamic funds require a unique portfolio valuation model which is not only distinctively different from the traditional portfolio performance measurement models but will supposedly produce a more accurate valuation of Islamic fund performance. The understanding of the characteristics of Islamic funds and the current Islamic fund valuation techniques may eventually help to pave the way for improving the assessment method of Islamic funds.

1.4 RESEARCH QUESTIONS

The problem statements of this study are as follow:

1.4.1 What are the general characteristics of return and risk of Islamic-based portfolios?

The issue that this study attempts to investigate is whether the return and risk of Islamic funds are significantly different from the return and risk of conventional funds. In view that the investment asset universe of Islamic funds is restricted by *Shariah*-screening – which admits only *halal* (permissible) securities and excludes interest-based securities such as conventional banking, finance and insurance companies as well as companies involved in *haram* (forbidden) or *gharar* (uncertainty) activities such as gambling and production of liquor, tobacco, armaments, pork-related and other unethical products or services – the return and risk profile of Islamic funds may also be altered by the *Shariah* restrictions on asset selection. By examining the return and risk profile of Islamic funds, it is possible to identify the actual factors that contribute to the performance of Islamic funds.

1.4.2 Is the performance of Islamic-based portfolios significantly different from the performance of conventional portfolios?

The issue that this study intends to analyse is whether Islamic fund performance exhibits a specific trend and whether the performance is significantly different from the performance of conventional funds. The analysis is important since previous results pertaining to Islamic fund performance are rather inconclusive – there is evidence that Islamic funds have outperformed, underperformed or levelled the return of conventional funds or the key market index. The contradictory findings are mainly attributed to the bias related to sample selection and time period covered by the previous studies. Therefore, by examining the performance of Islamic funds based on hypothetical portfolios covering a longer time period, it would be possible to determine the long-term trend of Islamic funds' returns and identify whether the observed differences between Islamic funds and conventional funds are statistically significant and so could undermine the viability of investment in Islamic funds.

1.4.3 How *Shariah*-compliance requirements affect the performance of Islamic-based portfolios?

The issue that this study wishes to investigate is whether the *Shariah*-compliance requirements have significant impact on the performance of Islamic funds. Two main issues pertaining to *Shariah*-compliancy are the restriction on securities selection, and the appointment of *Shariah* scholars to advise fund management companies on *Shariah*-related matters. Although the adherence to *Shariah* guidelines is crucial to ensure that Islamic funds remain *Shariah*-compliant, the two requirements, in particular, may have an adverse impact on Islamic funds' performance since they effectively reduce the investment asset universe, introduce an additional *Shariah*-risk, and increase the operating cost of Islamic funds. By examining the *Shariah* issue further, it will allow for better understanding of Islamic funds' return and risk and why the performance of the religious-based funds is different from conventional funds.

1.4.4 How fund management companies handle their Islamic funds and how the performance of the funds is evaluated?

The issue that this study attempts to examine is related to the current handling of Islamic funds by fund management companies and how the performance of Islamic funds is being evaluated in actual practice. This issue is stimulated by the argument that since Islamic funds are subjected to certain *Shariah*-compliance requirements; the standard portfolio valuation models may not be entirely accurate to measure the performance of Islamic funds. Therefore, an alternative portfolio valuation model which is tailored to the specific needs of Islamic funds may be needed. However, to produce an alternative portfolio valuation model would require a different economic paradigm or, at least, some modification to the existing economic theory. Since Islamic fund managers are at the front line of the Islamic fund industry, their input pertaining to Islamic funds' operation and performance valuation is crucial to determine the necessity of developing an alternative portfolio performance valuation model. Hence, this study intends to investigate the need for such an alternative portfolio valuation model from the perspective of the industry's practitioners. The issue is also stimulated by the general perception that Islamic funds were created largely by mimicking conventional portfolios, for which, the study will reveal how fund management companies actually perceive and handle their Islamic funds.

1.5 THE RATIONALE AND SIGNIFICANCE OF THE STUDY

In spite of the tremendous growth of Islamic-based investment and the continuing strong interest towards the Islamic banking and finance industry worldwide, literature on Islamic fund management and performance is, unfortunately, still deemed to be rather limited. Moreover, past studies have mainly based their analysis upon a sample comprising of either actual Islamic mutual funds or Islamic stock market index whilst the performance is measured using traditional portfolio performance valuation models. The findings, while valuable, are generally varied and inconclusive due to various limitations and shortcomings in the methodologies employed by past studies.

This study on the other hand, attempts to investigate the issues surrounding Islamic fund performance using different approaches. First, the characteristics of *Shariah*-compliant funds are examined using a hypothetical portfolio with the objective to determine the return and risk profile of Islamic funds. Secondly, the study seeks to investigate the issues related to Islamic fund management and performance from the perspective of Islamic fund managers; particularly the handling of Islamic funds, the impact of *Shariah*-compliance requirements on Islamic funds' performance, the appropriateness of using the traditional portfolio valuation models to evaluate Islamic funds' performance, and the necessity of an alternative portfolio performance measure for Islamic funds. Lastly, through the comprehensive understanding of the profile and operations of Islamic funds, this study attempts to suggest the appropriate course of actions to improve Islamic fund operation, thus contributing positively to the Islamic fund industry.

The study is different from past studies on two grounds: (1) it uses hypothetical portfolio, free from bias relating to fund managers' investment skills to determine the return and risk characteristics of Islamic funds; and (2) unlike previous studies which were entirely based on secondary data, this study uses both secondary and primary data. The secondary data is used in the analysis of hypothetical portfolios whilst the primary data is obtained through interview with Islamic fund managers. The input from industry practitioners is an added advantage of this study as it complements the quantitative analysis by broadening the scope of this study, enhancing the depth of the analysis and offers real-life perspective to the issues at hand. Therefore, this study is crucial since it helps to enrich the quality of research on Islamic funds and paves the way for future research on the development of an alternative portfolio valuation model appropriate for Islamic funds.

1.6 OVERVIEW OF THE STUDY

This study is organised as follows. A comprehensive analysis of past studies and actual data pertaining to portfolio theory and mutual fund performance is discussed in the literature review which spans three chapters. Chapter 2 elaborates the development of the modern portfolio theory over the half-century period since the 1950s to-date, including

discussions of the pioneering work of Markowitz (1952) portfolio theory, capital asset pricing model (CAPM) theory, efficient market analysis (EMH) theory, traditional portfolio performance valuation models and the analysis of portfolio managers' investment skills. The chapter also discusses the various other portfolio performance valuation methods which are different from the mean-variance framework. The review of past literatures on portfolio performance indicates that despite the extensive research, the truth about fund performance and fund managers' ability remain elusive due to various theoretical and empirical limitations inherent in the existing valuation models.

Chapter 3 provides a detailed review of ethically-oriented and Islamic-based funds. The analysis reveals that ethical and Islamic funds were created with certain non-pecuniary objectives, which make the funds fundamentally different from their conventional counterparts. Although there may be some doubt about the underlying motives behind the offer of ethical and Islamic funds by fund management companies, the funds have, nonetheless, provided alternative investments to the growing population of ethically- or religiously-concerned investors. However, despite their noble and divine intention, the funds may suffer from several disadvantages in terms of securities selection and higher operational costs which make it very difficult for the funds to outperform conventional funds. On the other hand, reviewing past literatures indicates that the analysis of ethical and Islamic fund performance have largely been based on the traditional portfolio valuation models which, in turn, have clearly failed to give due consideration to the constraints faced by ethical and Islamic funds, thus possibly producing rather biased results against the funds.

Chapter 4 looks into the historical development of the Malaysian stock market and fund management industry, particularly the growth of Islamic-based investments in the country. Malaysia is among several countries that have a dual financial system in which its Islamic finance and banking system is running successfully in parallel with conventional finance and banking. As the country aspires to become a global Islamic financial and investment centre, it has positioned itself well by developing a comprehensive infrastructure and regulatory framework to cater for the needs of the Islamic finance and banking industry. The success of the Malaysian stock market has stimulated the growth and development of the unit trust or mutual fund industry in the country. Past studies on the performance of the Malaysian conventional and Islamic unit

trust funds however, reveal that the findings are rather inconclusive, whilst in the case of Islamic funds, the outcomes are also sensitive to the type of benchmark used between conventional and *Shariah*-compliant instruments.

The research methodology used in this study is elaborated in Chapters 5 and 6. The study employed two research methods, namely quantitative analysis and qualitative analysis, which makes the study essentially different from previous studies analysing Islamic funds' performance. Chapter 5 explains the general research approach of this study including the nature of the study, the research strategy and tools, the types of data used and the analytical methods employed to analyse the data. The nature of this study indicates that it is a *case study* analysis and employs a *methodological triangulation technique* since there are two sets of data involved. The secondary data is analysed using quantitative analysis method whilst the primary data is analysed using qualitative analysis methodology. The quantitative analysis attempts to determine the salient features between return and risk characteristics of Islamic funds and conventional funds and examines the performance of the former relative to the latter. The analysis is undertaken based on samples of three hypothetical portfolios comprising entirely of Malaysian listed companies' stocks. The qualitative analysis is undertaken to gain greater insight into Islamic funds handling by fund management companies and valuation of Islamic funds' performance. The qualitative analysis employed semi-structured, face-to-face interview with Islamic fund/investment managers and the data is analysed using coding analysis based on the template analysis method.

Chapter 6 explains the empirical modelling used in the quantitative analysis which is designed to provide a comprehensive understanding of the portfolios' return and risk performance. The analysis begins with descriptive analysis which examines the general characteristics of the return and risk of the hypothetical portfolios. This is followed by in-depth analysis of the behaviour of the hypothetical portfolios' return in terms of their correlation, volatility and the impact of the different equity sizes on the portfolios' return. The final part of the quantitative analysis measures the performance of the hypothetical portfolios based on their risk-adjusted return using the three traditional portfolio performance valuation models.

The subsequent three chapters present the analysis and discussion of the results. Chapter 7 provides the discussion of the results obtained from the quantitative analysis. The descriptive analysis indicates that return of the *Shariah*-compliant portfolio is generally below the return of both the non-*Shariah*-compliant portfolios and the benchmark index which is in-line with the *cost of discipleship hypothesis*. This is attributed to the lower diversification benefits and high concentration of small-capitalised stocks in the Islamic-based portfolio. The analysis also suggests that the performance of Islamic-based portfolio that invests only in large capitalised stocks is superior to the performance of conventional portfolios and the benchmark index particularly during a bearish market condition. The results also highlights that in the process of portfolio construction involving stock selection, what is crucial to portfolio performance is the investment quality of the stocks rather than the quantity of the stocks. In addition, the results also confirm that the valuation of Islamic-funds is sensitive to the type of instruments used as the performance benchmark, particularly the choice between conventional and *Shariah*-compliant instruments. Another interesting finding from the quantitative analysis is that the historical performance of the hypothetical portfolios' returns shows a very strong mean reversion trend, thus suggesting that a passive buy-and-hold policy is unlikely to generate favourable positive return over a long-term period.

Chapter 8 discusses the results obtained from the qualitative analysis. The analysis found that Islamic funds are particularly characterised by their *Shariah* identities but generally have a smaller fund size and subscription rate, and generate lower return relative to conventional funds. The analysis also found that economic motive is normally the main reason behind Islamic funds offering. The analysis has identified several factors that significantly influence Islamic fund performance such as the fund managers' special investment skills, the general market condition, the stock selection approach, and the consequences of *Shariah*-compliance. The analysis also revealed that although all existing Islamic funds have been certified as *Shariah*-compliant, there is still a huge gap in terms of *Shariah* understanding and adoption of *Shariah* principles in the creation of the Islamic funds especially when considering that the funds were created mostly by mimicking conventional funds.

Chapter 9 contextualises the findings from the three sources of analysis namely the literature review, the quantitative analysis and the qualitative analysis. The discussion revolves around the four problem statements of this study which are related to the general return and risk characteristics of Islamic funds, the performance trend of Islamic funds, the *Shariah* impact on Islamic fund performance, and the Islamic fund management practice and performance measurement. Since the results of the three sources of analysis are not contradicting but complementing each other's findings, the study was able to derive a comprehensive conclusion pertaining to Islamic funds' operation and performance in Malaysia.

Chapter 10 gives the conclusion of the study. The chapter summarises the findings of the study and highlights the limitations as well as recommendations for future studies related to Islamic fund performance. Finally, the overall findings of this study were artistically encapsulated in an epilogue which underlines the real challenge that faces the Islamic fund management industry, in particular, and the Islamic finance industry, in general.

Chapter 2

PORTFOLIO PERFORMANCE MEASUREMENT AND FUND MANAGERS' INVESTMENT SKILLS: A LITERATURE REVIEW

2.1 INTRODUCTION

A glance over past literatures from the 1950s to date regarding the concept of portfolio investment and performance measurement reveals that modern portfolio theory has evolved from a pure theoretical pursuit into practical applications. Studies undertaken in the 1950s and 1960s that witnessed the development of the mean-variance equilibrium theory, in particular, were largely directed towards providing strong theoretical foundations for the portfolio performance measurement. Research carried out in the 1970s and 1980s were mainly aimed at testing and refining the original portfolio equilibrium models in the quest of finding the best way of constructing an optimal portfolio. The central issue in the literatures produced during 1950s to 1980s is primarily the aptness of variance (and standard deviation) as the ultimate measure of risk. However, a more significant development in modern portfolio theory actually occurred in the last two decades, with studies conducted in the 1990s mainly focussing on scrutinising the role and ability of fund managers, while studies carried out in this decade (2000s) have concentrated on the impact of trading microstructures on fund performance and the search for alternative portfolio performance measurement models beyond the traditional mean-variance framework.

This chapter begins with a discussion on literatures pertaining to the modern portfolio theory pioneered by Markowitz (1952) which paved the way for the development of the capital asset pricing theory (CAPM), in particular. This is followed by a review on literatures on the arbitrage pricing theory (APT), considered as the rival theory of the CAPM, and a discussion on how the modern portfolio theory fits into the concept of the efficient market hypothesis (EMH). The chapter then continues with a discussion on literatures related to portfolio performance measurement, considering both the portfolio performance measurement models developed based upon the mean-variance framework and the portfolio performance measurement models applying alternative

methods other than the mean-variance criterion. In view that the role of fund managers forms an integral part of portfolio theory, the chapter also explores the literatures concerning the performance of the fund managers. Here, the analysis primarily concentrates on two areas, namely the fund managers' return performance and the fund managers' investment capability. A critical analysis on past literatures then follows, after which, the chapter ends with a conclusion.

2.2 THE MODERN PORTFOLIO THEORY

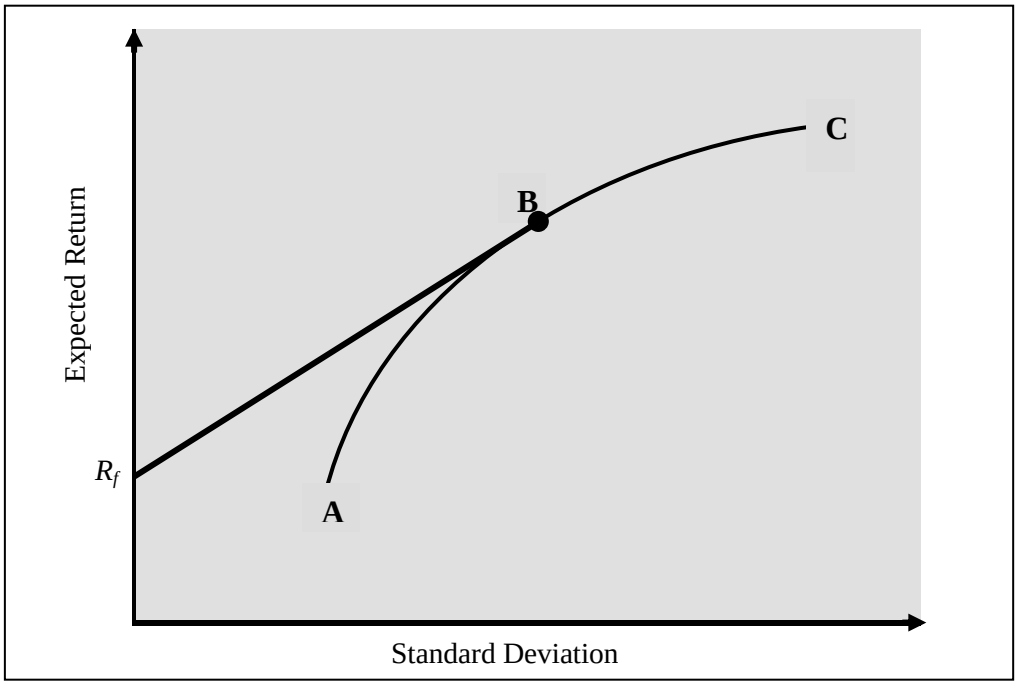
2.2.1 Markowitz's Portfolio Theory

The modern portfolio theory has benefited largely from the pioneering works of Harry Markowitz, dubbed as the father of the modern portfolio theory (see Elton *et al*., 1997: 1744). Markowitz (1952) explained for the first time ever how a rational investor would make portfolio selection under an uncertainty condition. Markowitz rejected the then conventional belief that to maximise return an investor should diversify into all securities that give the highest expected return based on the premise that returns of different assets in a portfolio are inter-correlated: hence such diversification may not be able to eliminate all the portfolio's risk. Instead, he argued that the variability of portfolio return is attributed to the portfolio's variance, of which, the risk can only be reduced by avoiding securities with high covariance. Therefore, what is important in a portfolio construction is to consider how the individual assets in the portfolio co-move with each other, thus contributing to the overall portfolio's ultimate risk.

Within the mean-variance framework, Markowitz proved that the superiority of diversification is only attainable through a combination of securities with a low covariance level, whilst the best (or efficient) portfolio for a risk-averse investor is not merely the one that offers the highest expected return, but rather, the portfolio that gives the most return for a given level of variance or the lowest variance for a given level of return. Through the distinction between the portfolio return and risk, it was then possible to formulate the "efficient frontier", a graphical presentation that shows the combination of all portfolios of risky securities that are mean-variance efficient.

An influential work by Tobin (1958) further extended the modern portfolio selection theory. Tobin showed that an investor who has access to risk-free instruments may also combine the riskless assets with risky assets to attain an optimal portfolio. The distinction between the investment in risk-free securities and risky securities, known as the Separation Theorem, enables an investor to determine the single optimal portfolio that has the combination of both riskless and risky securities on Markowitz's efficient frontier. Specifically, the best portfolio would be the one which is located at the point where the line passing the riskless securities (R_f) is tangent with the curve of the efficient frontier as illustrated by Figure 2.1. From the figure, the efficient frontier is shown by the curve A-C whilst the R_f-B line forms the capital market line (CML) which represents all possible combinations between riskless and risky securities that become efficient portfolios. However, the best and dominant portfolio of all the efficient portfolios is the one indicated by Point B. These findings stimulated further studies on the valuation of financial assets within the mean-variance framework and provide the necessary foundation for the formulation of all the mean-variance-related asset valuation models, of which, the most popular is the capital asset pricing model (CAPM) theory.

Figure 2.1: Efficient Frontier with Risk-Free Rate



2.2.2 The Portfolio Theory and the Capital Asset Pricing Theory (CAPM)

One of the most celebrated theories in financial economics is the capital asset pricing model (CAPM), a single-index asset pricing equilibrium model developed separately by Sharpe (1964), Lintner (1965) and Mossin (1966). CAPM has been very influential as it is widely used as a benchmark to measure the value of financial assets and capital budgeting projects as well as to assess fund managers' performance. Prior to CAPM, financial assets were mainly evaluated on the basis of their individual return whilst performance of investment funds were assessed mainly through relative measures such as fund ranking techniques due to the unavailability of a specific market equilibrium model suitable for use as a performance benchmark (Jensen, 1968). Hence, the discovery of the CAPM has provided the much needed benchmark for comparing financial assets and fund managers' performance. In academic fraternity, the main appeal of the model is its derivation from the expected-utility theory following the works on portfolio selection theory by Markowitz (1952) who had, in turn, extended the works on utility theory by Bernoulli (1738) and Von Neumann and Morgenstern (1944) as well as the theory of general equilibrium involving risks by Arrow-Debreu (1954) (see Dimson and Mussavian, 1999).

For general investors and fund managers, the main attraction of the theory is its simple yet powerful interpretation of the risk as the most crucial factor affecting financial assets. By distinguishing between diversifiable and non-diversifiable risks, the model brilliantly reduces all forms of risks inherent in an asset into just a single factor, the beta (β), which measures non-diversifiable risks hence making it easily understandable by both investors and fund managers alike as compared to other asset valuation models. Nevertheless, since its inception, the CAPM has been tested rigorously both theoretically and empirically such as by Fama (1968), Black (1972), Fama and MacBeth (1973), Blume and Friend (1973), Merton (1973), Dybvig and Ross (1985), and Gibbon *et al.* (1989). It was also subjected to intense academic debates by Friend and Blume (1970), Roll (1978), Roll and Ross (1980), Green (1986), Grinblatt and Titman (1987), and Fama and French (1992). Notwithstanding this, despite being highly controversial, CAPM arguably remained as the most dominant single-index model in financial economics theory.

The CAPM is principally derived based upon Markowitz's (1952) efficient frontier and Tobin's (1958) separation theorem. It depicts a linear relationship theory between return and risk (or mean-variance relationship) based on the underlying assumptions: (1) All investors are risk-averse and would choose an efficient portfolio that would maximise their end-of-period expected utility (the marginal utility decreases as wealth increases); (2) All investors have the same one-period investment horizon; (3) All investors measured portfolio performance solely based on mean and variance (return and risk) and they all have homogenous expectations on the distribution of the end-of-period future returns; (4) There is no friction in the trading of financial assets such as the absence of taxes or transaction costs, and that the financial market is informationally efficient; and, (5) All investors can choose to invest in any financial assets, and they may borrow or lend any amount of money at the rate similar to risk-free rates. Under these assumptions, the CAPM shows that the expected return for an asset or portfolio *i* is related to the expected excess return of the market portfolio adjusted for the systematic risk of the asset or portfolio, commonly represented as:

$$E(\tilde{R}_i) = R_f + \beta_i[E(\tilde{R}_m) - R_f] \quad (2.1)$$

where $\tilde{R}_i$ is the expected return on asset *i*, $\tilde{R}_m$ is the expected return on the market portfolio; R_f is the return on a risk-free asset which represents the lending or borrowing rate; and, β_i is the measure of the asset's systematic risk, calculated as follows:

$$\beta_i = \frac{Cov(\tilde{R}_i, \tilde{R}_m)}{\sigma_m^2} \quad (2.2)$$

where $Cov(\tilde{R}_i, \tilde{R}_m)$ is the covariance between return on the asset and return on the market and σ_m^2 is the variance of the market returns. In so far that the return and risk of an asset is represented by a linear relationship as proposed by Equation 2.1, the CAPM asserts that the asset's beta coefficient, β, is the only factor that contributes to the variability of return since the other forms of unsystematic risks will be eliminated by diversification. This insight is rather appealing as it has significantly simplified the process of portfolio selection and allows investors and fund managers to focus on a single risk factor when diversifying their investment.

Earlier literatures on CAPM have mainly focussed on testing the robustness of the theory and its application for portfolio performance measurement. Notwithstanding however, since the model was developed based on specific assumptions, certain studies have been directed towards the testing of the validity of the assumptions to determine their accuracy in representing the real world situation. For instance, Black (1972) analysed the validity of the assumption of using the risk-free rate as borrowing and lending rate; Fama and MacBeth (1973) as well as Blume and Friend (1973) examined the assumption of the perfect capital market; Merton (1973), Gressis *et al*. (1976) and Mulvey *et al*. (2003) explored the robustness of the CAPM in multi-period setting instead of the single-period horizon assumption; Goldsmith (1976) studied the impact of transaction costs; Dybvig and Ross (1985), Ippolito (1989) and Elton *et al.* (1993) analysed the effect of information asymmetry; and Longstaff (2001) analysed the impact of liquidity constraints on the CAPM valuation. By relaxing certain assumptions to better represent the real world situation, several studies have stimulated the development of other CAPM variants. The following section briefly discusses the findings of some of these studies.

2.2.2.1 Tests of the CAPM and CAPM Variants

Black (1972) contended that the assumption of the risk-free rate as a suitable proxy for borrowing and lending rate is the most restrictive among all the CAPM assumptions, saying that the assumption "is not a very good approximation for many investors, and one feels that the model would be changed substantially if this assumption were dropped" (Black, 1972: 445). He proved that the original CAPM equation needs to be adjusted when no riskless securities are available and proposed the zero-beta CAPM as an alternative equation. Merton (1973) attempted to relax the CAPM assumption that all investors have a single-period investment horizon. He argued that for an investor who is risk-averse, his utility function is not influenced solely by his own wealth confined in a single time period but is also subjected to the overall state of the economy that expands in a multiple period horizon. This view is shared by Gressis *et al*. (1976) who found that an individual's portfolio choice is also affected by his investment horizon and that "knowledge of one's utility function is not sufficient for determining his choice of portfolio".

The necessity to adapt for a multi-period model is further strengthened by Mulvey *et al.* (2003) who argued that the single-period model of CAPM has failed to consider the variability of portfolio return and risk caused by dynamic portfolio strategy such as portfolio rebalancing activities undertaken by fund managers. They asserted that "[A] multi-period model will perform better than single-period mean-variance (MV) models for long-term investors" (Mulvey *et al.*, 2003: 36). To make the CAPM more adaptable to a longer time period, Merton (1973) developed the Intertemporal CAPM (ICAPM), a variant of CAPM that caters for a multi-period setting. Breeden (1979) subsequently extended the works of Merton (1973) on ICAPM by introducing Consumption CAPM (CCAPM), a single-beta factor of multi-period CAPM which is in contrast with the multi-beta factor of Merton's ICAPM. For CCAPM however, the beta is estimated based upon an aggregate consumption flow instead of market return as in ICAPM.

The impact of transaction costs is analysed by Goldsmith (1976) who found that an investor will hold more securities as his wealth increases but when there are transaction costs incurred, the investor will adjust his portfolio composition by investing more in risky assets. Thus, his finding implies that transaction costs could, in fact, influence the portfolio decision process of an investor. Carhart (1997) in his analysis on the persistence of mutual fund performance provides further evidence on the significance of transaction costs when he concluded that "the investment costs of expense ratios, transaction costs and load fees all have a direct, negative impact on performance" (Carhart, 1997: 81). Indeed, these findings contradict the original CAPM's assumption that simply ignores transaction costs.

Several studies have tested the CAPM assumption of the informationally efficient market. For this purpose, the natural candidates are usually investment fund or portfolio managers who are deemed to have access to privileged information not normally available to general investors. The first such study applying the CAPM model was undertaken by Jensen (1968). His analysis on 115 mutual funds concluded that fund managers, in general, were unable to outperform the market or even to beat the simple buy-and-hold strategy. Dybvig and Ross (1985) however, found that fund managers who possess superior information were able to achieve superior performance. Their study highlights an apparent deviation in the CAPM's security market line (SML) when the

performance for fund managers with superior information cannot be accurately plotted on or around the SML.

Ippolito (1989) studied the impact of information cost on capital market efficiency. Contrary to earlier findings that mutual funds underperformed the market index such as by Sharpe (1966) and Jensen (1968), he claimed that mutual funds are efficient enough in their trading and information gathering activities and that they do earn superior returns which are sufficient to cover for the higher fees they charged their investors. Elton *et al.* (1993) however, rejected Ippolito's (1989) findings by arguing that his sample of mutual funds has failed to properly account for the performance of non-S&P (Standard & Poor's) stocks. Further, they contended that once the returns on non-S&P stocks are included, his analysis will produce similar results as the previous studies. Regardless of the outcomes however, the assumption of an informationally efficient market as assumed by the CAPM has clearly being challenged which, in turn, raises serious doubt about the validity of the CAPM itself.

Of all the critics on the validity of the CAPM, arguably the most significant are those that centred on issues pertaining to the appropriate proxy to represent the market portfolio and the assumption that the beta alone is sufficient to explain the variability of securities return. The following section discusses some of the major findings related to this debate.

2.2.2.2 Critics on CAPM

Prior to Roll (1977), the CAPM has generally succeeded in resisting criticisms and has withstood various tests designed to challenge its validity. Blume and Friend (1973) rejected the CAPM as the pricing equilibrium for *all* financial assets. Their analysis found that the CAPM is suitable for valuing common stocks but not suitable for valuing corporate bonds. Elton *et al*. (1976: 1341) highlighted three main obstacles that hinder the successful implementation of Makowitz's portfolio theory, from which the CAPM was derived, namely the difficulty in estimating the type of input data necessary; the lengthy time and the huge costs involved to generate an efficient portfolio; and, the

difficulty of educating portfolio managers on the relationship between return and risk expressed in terms of covariances and standard deviations.

The seminal works by Roll (1977, 1978) however, cast serious doubts on the validity of the pricing equilibrium to the extent that the theory was relegated to a defensive position. Unlike previous critics on CAPM that usually focussed on the testing of the model's restrictive assumptions, Roll argued that the CAPM itself may not be testable since the model is highly vulnerable to mis-specification error thus no appropriate and conclusive test on the theory is possible. He pointed out that the CAPM "is testable in principle", however, "no correct and unambiguous test of the theory has appeared in the literature" and "there is practically no possibility that such a test can be accomplished in the future" (Roll, 1977: 129-130).

Roll (1977) contended that both CAPM parameters, namely the market portfolio (m) and the beta (β), are subject to serious flaws, if they are not treated properly. He stressed that the market portfolio (m) in Equation 2.1 should consist of *all* assets, both tangibles and intangibles, available in the market. Otherwise, it will not be possible to determine whether the market portfolio (m) is mean-variance efficient, which is a pre-requisite condition of the theory. Consequently, the use of a proxy portfolio or market index to represent the market portfolio (m) in the equation, as normally applied in past literatures, when the true market portfolio (m) is actually unknown will not yield definitive results: If the proxy portfolio is mean-variance efficient, the outcomes generated from the computation using the proxy portfolio might seem to satisfy all the theory's assumptions even if the true market portfolio (m) is, in fact, not mean-variance efficient.

Shanken (1987) provides further empirical evidence on the danger of using a proxy portfolio in the testing of the CAPM. He examined the correlation between a proxy and a true market portfolio and found that the former does not fully represent the latter. Since his analysis is effectively a joint hypothesis between the validity of the CAPM and the efficiency of the proxy portfolio, his findings suggests that either the CAPM theory is invalid or the proxy has been mis-specified. Further, he concluded that the use of a proxy market in the testing of the CAPM to replace the true market portfolio (m) is only valid on condition that the proxy portfolio is an *unambiguous* representative of the true market

portfolio. Other studies such as Frankfurter (1976), Peterson and Rice (1980), Green (1986), Lehmann and Modest (1987), Grinblatt and Titman (1994), and Matallín-Sáez (2006) have also supported the view that the CAPM is highly sensitive to the use of a proxy portfolio or market index.

Roll (1977, 1978) also criticises the notion that the beta alone can explain the variability of asset return. The CAPM assumes that only non-diversifiable or systematic risks, represented by the beta (β), affect an asset's return. However, Roll (1977) argued that since the linear relationship between expected return and beta is derived from the assumption of market portfolio's mean-variance efficiency, neither are independently testable. Therefore, an empirical test on the model is practically a joint test between the validity of the linearity relationship between return and beta, and the mean-variance efficiency of the market portfolio. Another crucial problem with beta is that the parameter is estimated using historical (ex-post) time series data. Considering that the stock market is proven to be informationally efficient, at least in the weak form, securities returns are not expected to be correlated from one period to another since such correlation, if it exists, would entail the rejection of the efficient market. Therefore, an estimation obtained from an ex-ante model using the beta estimated from ex-post data which is not supposed to be correlated is poised to be dubious.

Contrary to the notion that beta alone is a sufficient measure of risks, numerous studies have concluded just the opposite with evidence that asset returns are equally affected by various micro- and macro-economic factors in both quantitative (such as stock market, economics and financial data) as well as qualitative (such as management efficiency, marketing strategy and business policy) natures. The observed anomalies in stock returns such as the price–earnings ratio effect (Basu, 1977; Ball, 1978), the size effect (Banz, 1981), the leverage effect (Bhandari, 1988), and the book-to-market-equity ratio (Fama and French, 1992) proved the insufficiency of beta as the only factor affecting asset returns (see Fama, 1996: 441). In a recent paper, Pendaraki *et al.* (2005) proposed a new methodology for portfolio construction and selection based on the multi-criteria decision aid (MCDA) method. They argued that the new model which takes into account the multi-dimensional nature of risks is more accurate than the traditional linear-based models that assume variance (or standard deviation) as the only source of variability (risk) to return of an asset.

Criticism on the CAPM has not only been directed towards the original standard model but also towards its other variant model, since these models shared similar properties with the standard model (Shanken, 1987: 108). For instance, although the ICAPM is deemed to be significant in theoretical perspective, it is "not very tractable for empirical testing, nor is it very useful for financial decision-making" (Breeden, 1979: 266). This viewed is shared by Fama (1996: 442) who argued that the ICAPM is too complicated mathematically that it "lacks the simple intuition that makes the CAPM so attractive".

In brief, past studies have indicated that the single-index model is a poor predictor for future expected return due to the various empirical restrictions inherent in the CAPM. Alternatively, a multi-index equilibrium model has been proposed to replace the single-index model. The advantage of the multi-index model over the single-index model has been tested empirically by Gibbons *et al*. (1989). The most popular multi-index model is the arbitrage pricing theory (APT) developed by Ross (1976). The following section discusses the nature of the APT.

2.2.3 The Portfolio Theory and the Arbitrage Pricing Theory (APT)

The prospect of the use of a multi-factor pricing model to explain the variability of asset return was initially discussed by Gehr (1975; cited in Roll and Ross, 1980). However, it was the seminal works by Ross (1976, 1978) that led to the development of the arbitrage pricing theory (APT), the testable form of the multi-index asset pricing model. It is rather obvious that the APT was developed as a viable alternative to the CAPM amid the various shortcomings of the single-index model. The APT implies that the random return on asset *i* (R_i) satisfies the following *K*-factor linear model as follows:

$$R_i = E_i + \beta_{i1}\delta_1 + ... + \beta_{iK}\delta_K + \varepsilon_i \qquad i = 1, \ldots, N \qquad (2.3)$$

where E_i is the expected return on asset *i*, the δ_K are the mean zero common factors, the β_i measure the systematic risk of the common factor δ_K, and the ε_i are the noise term or

unsystematic risk component of the common factor assumed to be uncorrelated with the δ_K and with each other (see Roll and Ross, 1980; Shanken, 1982).

In hindsight, the APT appears as if it is a multi-beta version of the CAPM. In fact, Shanken (1985: 1189) claimed that the APT is simply "a multi-beta interpretation of the CAPM". He further argued that the use of the CAPM intuition pertaining to the linearity relationship between asset returns and beta in the APT has exposed the multi-index equilibrium model to similar limitation faced by the CAPM. Therefore, if any test based on a joint hypothesis between the linearity of asset return–beta relationship as well as the market portfolio efficiency rejected the CAPM, the same rejection would also apply to the APT. In view of the Shanken (1985) argument, it is necessary to underline the difference(s) between the CAPM and the APT.

The major difference between the CAPM and the APT lies on the merit given on their factor variables. The CAPM theory essentially emphasises the relationship between the covariance of asset returns and a certain market portfolio based on the presumption that the universe of an asset's risk factors can be reduced into a mere two categories, namely the systematic (non-diversifiable) and unsystematic (diversifiable) risk, thus resulting in the beta alone as the sufficient measure for risk. Consequently, the characteristics of any economic variables or securities do not play a significant part in CAPM theory. On the contrary, APT theory emphasises the covariance of asset returns and certain pre-selected common factor variables that are deemed to affect asset returns, hence making it essentially a multi-factor model that allows for more than one factor to be incorporated in the return equilibrium model (see Shanken, 1985; Roll and Ross, 1980; and Dimson and Mussavian, 1999). In addition, Roll and Ross (1980) outlined the theoretical differences between the CAPM and the APT, of which, they argued that "the APT is based on a linear return generating process as a first principle, and requires no utility assumptions beyond monotonicity and concavity". Unlike CAPM, the APT can be applied in both single-period and multi-period investment settings, and it does not depend on the condition that the market portfolio must be mean-variance efficient (Roll and Ross, 1980: 1074).

Benefiting from lesser restrictions than the CAPM, the APT is arguably more testable than, and superior to, the single-index model as argued by Roll and Ross (1980),

Grinblatt and Titman (1987), Chen *et al*. (1986), Fama and French (1992), and Fama (1996). Its ability to cater for multiple systematic risks enables the APT to replicate the real world situation better than the CAPM, refuting the notion that systematic risk, or beta, alone is sufficient to explain the variability of asset returns as proposed by the CAPM. Shanken (1982) attributed the advantage of the APT over the CAPM to its multi-beta setting. Amid the overwhelming evidence that asset returns are affected not just by the market's beta, Fama (1996: 441-442) suggested that "multifactor models should be considered in research applications that require estimates of expected returns". Past literatures also reveal that the APT has enjoyed less criticism as compared to the CAPM. This however, does not indicate that the multi-factor model is free from any obstacles.

Perhaps the main difficulty in the process of formulating the APT is to determine what common factors (δ) are to be included and how many of these factors are required in the model (see Elton and Gruber, 1997). Although the APT has been proven as a viable alternative to CAPM, the theory is practically silent in terms of identifying the common factors that are relevant as well as the exact number of these factors that are needed to construct an appropriate APT model. Several studies have attempted to identify the common factors: Roll and Ross (1980) used the factor analysis method to determine the common factors, but this method is argued by Shanken (1982) as inadequate since the method is purely based on statistical correlations without having significant economic interpretation.

Chen *et al*. (1986) analysed a set of macroeconomic variables and observed that industrial production as well as changes in the risk premium, the yield curve and the inflation are among the systematic factors that affect asset returns. Surprisingly however, they found that stock market indices, real per capita consumption and oil price changes do not affect asset returns systematically. In another study, Fama and French (1992) identified the common factors from a cross section analysis on firm characteristics through a portfolio of stocks. Their findings that size and book-to-market equity are the two most important factors affecting securities returns have added to the volume of research that show the significance of firm characteristics as the determinant of stock returns such as size (Banz, 1981), leverage (Bhandari, 1988), and price-earnings ratio (Basu, 1977; Ball, 1978).

To conclude, the APT has been suggested as a viable alternative to the CAPM. The proponents of the APT have provided the evidence that the multi-factor model is superior to the single-factor model in view of its ability to capture more than one systematic risk factor in the pricing equilibrium. Notwithstanding however, the difficulties in selecting the appropriate factors as well as in determining the optimal number of factors to be included in the APT remain as the major obstacle in the construction of the multi-factor model.

2.2.4 Portfolio Theory and the Efficient Market Hypothesis (EMH)

This section discusses how the portfolio theory fits into the concept of efficient market hypothesis (EMH). Since the beginning of the works by Fama (1970), the EMH continues to evolve and has become an integral part of the modern financial theory. The EMH is principally the notion that securities prices 'fully reflect' all available information and that prices will adjust instantaneously to the arrival of new information. The intuition behind the EMH is simple, but very significant. If EMH holds, then securities prices are deemed to trade at their fair (or intrinsic) value. Consequently, since prices are poised to move in a random fashion over time, their unpredictability means no investor is expected to be able to earn abnormal profit through any trading strategy designed to manipulate the historical price trend. In its extreme form, the EMH implies that all trading techniques whether based on fundamental analysis or technical analysis or any other investment strategies of fund managers are doomed to fail.

Prior to Fama (1970), securities prices were believed to fluctuate randomly without exhibiting significant correlation between time periods as reported by Kendall and Hill (1953). However, Fama (1970) made a rather significant contribution to the theory of finance when he formalised the concept of market efficiency and developed a way to test the EMH by dividing the market efficiency into three levels: (1) the weak form efficient; (2) the semi-strong form efficient; and (3) the strong form efficient. In this regards, the test of EMH within the portfolio management environment is essentially the test of the strong form of the market efficiency, for which, portfolio or fund managers obviously are the natural candidates.

Earlier works on EMH have utilised the CAPM as the benchmark to measure fund managers' performance. Studies by Fama and MacBeth (1973), Kon (1983), Chang and Lewellen (1984) and Henriksson (1984) found that fund managers generally are not able to predict or capitalise on stock price movements, a finding which is consistent with the EMH. Ippolito (1989) analysed mutual fund managers' performances under the condition that information is costly to obtain. His study extended the earlier works by Grossman (1976) and Grossman and Stiglitz (1980) who found that, under the condition in which information is costly to obtain, it is reasonable to expect that trading by informed investors will take place at a price level which is different from uninformed investors in order to compensate the informed investors for the cost of obtaining the information. His findings that fund managers were able to outperform index funds are consistent with the two studies but contradict the results of the much earlier studies and the EMH. Responding to Ippolito's (1989) claim, Elton *et al.* (1993) re-analysed the same sample used in his study and argued that his findings were subjected to the sample mis-specification error due to poor treatment of non-index securities returns.

Studies undertaken in the 1990s have generally challenged the validity of the EMH particularly with respect to the strong form version of the EMH. Using more comprehensive database and analysis techniques, researchers were able to analyse mutual fund performance in greater detail by incorporating the impact of trading microstructure such as transaction costs, taxes, management fees and fund flows in their analysis. Mech (1993) analysed the autocorrelation of portfolio return and found that transaction costs affect return by causing delays in price adjustment. His findings contradict the EMH which states that securities prices adjust immediately to fully reflect all available information. Further evidence disputing the strong form version of the EMH can be found in literatures on the persistency of mutual fund performance such as by Grinblatt and Titman (1992), Hendricks *et al*. (1993) and Carhart (1997). Though the evidence of persistency in fund managers' performance indicates that either it is a short-term phenomenon or is not robust statistically, the findings have nevertheless proved that some fund managers do enjoy informational advantages or possess superior investment skills which allow them to outperform the market continuously.

Notwithstanding, evidence against the EMH is far from conclusive. For instance, there are more studies showing mutual funds underperformance and hence supporting the

EMH, than otherwise. One possible cause that deters researchers from reaching an unambiguous conclusion is the limitation in the standard asset pricing model used in the analysis of the EMH. In addition, any test on EMH is essentially a joint hypothesis test on: (1) the validity of the EMH; and (2) the validity of the equilibrium model used to carry out the test. Therefore, amid the contradicting results on EMH, it will be difficult to ascertain whether the observed anomalies in stock returns and the evidence of fund managers' underperformance actually signify that the EMH is invalid or it might be due to certain flaws in the existing asset pricing models (see Ball, 1978). However, as far as the fund managers' performance is concerned, the overwhelming evidence of their barely average performance indicates that at least the strong form of the EMH does hold (see Dimson and Mussavian, 1998).

2.3 PORTFOLIO PERFORMANCE MEASUREMENTS

There are various portfolio performance valuation methods that have been proposed in previous studies which can be categorised into portfolio performance measurement methods based on the mean-variance criterion and non mean-variance criterion. Both methods are discussed in the following sections.

2.3.1 Portfolio Performance Measurements Based on the Mean-Variance Criterion

Prior to the CAPM, analysis on the mutual fund performance was based primarily on performance ranking techniques due to the unavailability of a benchmark against which the mutual fund performance can be compared. Through the CAPM, researchers were able to formulate an absolute measurement value to evaluate mutual fund performance. The three most widely used risk-adjusted portfolio performance measures are the Treynor Index (Treynor, 1965), the Sharpe Index (Sharpe, 1966), and the Jensen-*alpha* Index (Jensen, 1968). The three measures were principally derived from the CAPM equation. Friend and Blume (1970) provide a concise description of the derivation process. Assuming that all the CAPM assumptions hold, the financial market is said to be in equilibrium with the individual asset or portfolio (represented by the symbol *i*) poised to trade at their fair value price satisfying the general *ex-ante* CAPM as Equation 2.1 below:

$$E(\tilde{R}_i) = R_f + \beta_i[E(\tilde{R}_m) - R_f] \quad (2.1)$$

However, considering the extreme limitation imposed by the CAPM assumptions, it is possible that one or more of the assumptions would be violated thus resulting in disequilibrium in the financial market. To reflect the disequilibrium, Equation 2.1 is re-written as follows:

$$E(\tilde{R}_i) - R_f = \eta_i + \beta_i[E(\tilde{R}_m) - R_f] \quad (2.4)$$

where η_i is the measure for disequilibrium. If η_i equals zero, the asset or portfolio is in equilibrium. However, if η_i is greater than zero, the expected return of the asset or portfolio is larger than the return anticipated by the CAPM equation thus indicating undervalued position. Likewise, if η_i is lesser than zero, the expected return of the asset or portfolio is lower than the return anticipated by the CAPM equation thus implying overvalued position. The Jensen-*alpha* Index is essentially derived from Equation 2.4 with η_i is replaced by an alpha (α) in Jensen (1968) but applying similar intuition and re-written as follows:

$$E(\tilde{R}_i) - R_f = \alpha_i + \beta_i[E(\tilde{R}_m) - R_f] \quad (2.5)$$

The Treynor Index is derived by dividing both sides of Equation 2.4 with β_i yielding:

$$\frac{E(\tilde{R}_i - R_f)}{\beta_i} = \frac{\eta_i}{\beta_i} + [E(\tilde{R}_m) - R_f] \quad (2.6)$$

The Treynor Index is represented by the left hand side of Equation 2.6 above. If η_i equals zero, the Treynor Index will equal to $[E(\tilde{R}_m) - R_f]$ which, in turn, is independent from the systematic risk, β. The measure is essentially similar to the Jensen-*alpha* Index as shown when $[E(\tilde{R}_m) - R_f]$ is transferred to the left hand side of the equation to obtain:

$$\frac{\eta_i}{\beta_i} = \frac{E(\tilde{R}_i - R_f)}{\beta_i} - [E(\tilde{R}_m) - R_f] \quad (2.7)$$

Therefore, the Treynor Index can be interpreted as the measure of excess return per unit of systematic risk.

Similar to Jensen-*alpha* Index and Treynor Index, the Sharpe Index is essentially derived from Equation 2.4. Substituting the systematic risk, β, in Equation 2.4 with its definition as in Equation 2.2 gives:

$$E(\tilde{R}_i) - R_f = \eta_i + \frac{Cov(\tilde{R}_i,\tilde{R}_m)}{\sigma^2_{\tilde{R}_m}}\left[E(\tilde{R}_m) - R_f\right] \quad (2.8)$$

Since, $$Cov(\tilde{R}_i,\tilde{R}_m) = \rho(\tilde{R}_i,\tilde{R}_m).\sigma(\tilde{R}_i)\sigma(\tilde{R}_m) \quad (2.9)$$

hence, $$E(\tilde{R}_i) - R_f = \eta_i + \frac{\rho(\tilde{R}_i,\tilde{R}_m).\sigma(\tilde{R}_i)}{\sigma_{\tilde{R}_m}}\left[E(\tilde{R}_m) - R_f\right] \quad (2.10)$$

Sharpe (1964) proved that if the portfolio is efficient, then $\rho(\tilde{R}_i,\tilde{R}_m) = 1$. Therefore, dividing both sides of Equation 2.10 with $\sigma_{\tilde{R}_i}$ yields:

$$\frac{E(\tilde{R}_i) - R_f}{\sigma_{\tilde{R}_i}} = \frac{\eta_i}{\sigma_{\tilde{R}_i}} + \frac{\left[E(\tilde{R}_m) - R_f\right]}{\sigma_{\tilde{R}_m}} \quad (2.11)$$

The left hand side of Equation 2.11 is the Sharpe Index which indicates the excess return per unit of standard deviation of the return. However, since risk is the dominant factor, the Sharpe Index is suitable only for evaluating a well-diversified or efficient portfolio, for which, the systematic risk is the remaining risk available. Therefore, unlike the Treynor Index and the Jensen-*alpha* Index that can be used to measure both a portfolio or individual securities and do not require efficiency as a prior condition for their usage, the Sharpe Index is not appropriate for evaluating individual securities due to the presence of unsystematic risk.

Of the three measures, the Jensen-*alpha* Index is arguably the most widely used in empirical studies probably owing to its direct adaptation to the CAPM. Studies such as by Kon (1983), Henriksson (1984), Lehman and Modest (1987), Gibbons *et al*. (1989), Ippolito (1989), Grinblatt and Titman (1992, 1994), Elton *et al.* (1993), Hendricks *et al*.

(1993), Malkiel (1995), Cai *et al*. (1997), Daniel *et al.* (1997), Detzler (1999), Bers and Madura (2000), Patro (2001) as well as Otten and Bams (2007) have all applied the original Jensen-*alpha* Index or its variations. However, more recent studies such as by Agudo and Sarto Marzal (2004), Avramov and Wermers (2006), and Choi (2006) have utilised the Sharpe Index.

Several studies have attempted to use a combination of more than one type of measure to examine the effect of the different measures on portfolio performance valuation and ranking. For instance Peterson and Rice (1980), Kryzanowski and Sim (1990), Bauman and Miller (1994), Chunhachinda *et al.* (1994) and Rahman (1994) combined both the Treynor Index and Sharpe Index, whilst Friend and Blume (1970), Chuan (1995), Shukla and Singh (1997), Leong and Lian (1998) and Artikis (2003) used all the three portfolio measures. Controversial though it is, each measure could produce different portfolio performance rankings, hence, making it rather difficult to reach a conclusive result when more than one performance measure is used or when a different group of portfolios are analysed (see for instance Bers and Madura, 2000; Artikis, 2003; Agudo and Sarto Marzal, 2004). Critics have argued that since the three measures were derived from the CAPM theory, each measure is subjected to similar criticism afflicting the CAPM particularly the criticism by Roll (1977, 1978). Friend and Blume (1970) even suggested that the accuracy of performance measurement results obtained using any of the three measures may be suspicious due to possible bias against risky portfolios which, in turn, is attributed to the CAPM's assumption that all investors enjoy similar lending and borrowing rates equal to the risk-free rate instrument.

Apart from the three portfolio performance measures, the CAPM has also been popularly used as a tool to differentiate between performing portfolios or securities with their underperforming counterparts. By plotting the expected return against its beta coefficients, one obtains a linear regression line known as the securities market line (SML) which is a graphical representation of the CAPM. A portfolio that is mean-variance efficient shall be plotted exactly on the SML implying that no abnormal profit greater than anticipated by the CAPM could be earned from this portfolio. Any deviation from the SML would imply that it might be possible to earn abnormal profit by investing in undervalued portfolios. In this respect, undervalued or performing portfolios are those plotted above the SML whilst overvalued or underperforming portfolios are those lying

below the SML. The simplicity of its usage and easily understandable interpretation are the attractive qualities that make the SML a popular tool for segregating between outperforming and underperforming portfolios.

Several studies however, have criticised the validity of using the SML for portfolio valuation purposes. Dybvig and Ross (1985) argued that the SML is prone to error caused by information asymmetry, a factor which is beyond the mean-variance efficiency domain and not properly captured by the SML. Therefore, any deviation from the SML may not necessarily indicate superior or inferior performance as Dybvig and Ross (1985: 397) have stated that:

> ... a manager who makes optimal use of superior information may plot above, on, or below the SML, and may plot inside, on, or outside the efficient frontier – and every combination of these cases is possible.

In addition, Green (1986) has shown that the SML is vulnerable to benchmark error since it is highly sensitive to the portfolio or benchmark used as proxy to the market portfolio especially if the chosen proxy is not mean-variance efficient.

Despite their theoretical limitations, the traditional portfolio performance measures continue to dominate the analysis of mutual fund performance both in academic literatures as well as in the real world. Like the CAPM, their prevailing popularity is attributed mainly to their simple yet powerful inferences. Nevertheless, various alternative portfolio performance measures departing away from the mean-variance framework have also been developed. The following section discusses some of these measures.

2.3.2 Other Portfolio Performance Measurements Methods

One of the major difficulties afflicting portfolio performance measures derived based on the mean-variance framework is the considerable mathematical knowledge required before the measures can be fully appreciated. Therefore, several alternative measures for portfolio performance valuation have been proposed that do not utilise extensive mathematical algorithms. For instance, Clarkson and Meltzer (1960) introduced a

portfolio selection technique using a *heuristic approach*, computer programming that simulates the procedures and decision-making processes for selecting portfolios. They argued that this method of portfolio selection is more appropriate than the mathematical approach which might rest solely on probabilistic assumptions or not be testable.

Renwick (1968) suggested that portfolio performance is essentially characterised by the quality of securities that make up a particular portfolio. Therefore, a portfolio with superior (inferior) performance can be consistently created through a proper selection of best (poorly) performing securities. He used the *discriminant analysis* technique in which securities are selected based upon any two of the four economic/financial variables, namely: the rate of return on total assets; the rate of output growth; capital structure; as well as the rate of retention of available income. In a similar vein, Treynor and Black (1973) stressed the importance of securities' analysis in portfolio construction and argued that such analysis could significantly help to improve portfolio performance especially if the fund manager does not have sufficient knowledge in the more mathematically complicated portfolio construction methods of Markowitz or Sharpe.

Arguing that the CAPM could not possibly be true for *all* assets, Dybvig (1988) proposed the *payoff distribution pricing model* (PDPM) as an alternative to the CAPM. Notwithstanding however, the PDPM is arguably an extension of the CAPM itself by virtue that the PDPM employs numerous theoretical assumptions similar to the CAPM. Furthermore, he admitted that while the PDPM has been tested successfully in theoretical form, the model has yet to undergo rigorous empirical tests.

Bauman and Miller (1994) contended that portfolio valuation measures which are based exclusively on beta and sigma have failed to take into account the dynamism in portfolio objectives as well as the impact of investment holding period. They argued that this has resulted in the portfolio ranking produced by both the Treynor and the Sharpe measures becoming inconsistent over time. To mitigate the problem, Bauman and Miller (1994) proposed a measurement model that takes into account a particular portfolio's objectives assuming that fund managers will maintain similar investment style throughout the investment period. The other significant attribute of their valuation model is that it takes a period of complete market cycle which will lessen the impact of temporary market volatility such as the over-reaction to bull and bear market thus producing a more

consistent portfolio ranking between the successive market cycles. They found evidence of correlation in the year-to-year returns of mutual funds which implies that it is possible to predict the future returns of the funds.

Chunhachinda *et al.* (1994) compared the portfolio ranking produced by the Treynor Index and the Sharpe Index with the ranking generated by the *higher moment performance measures* developed by Prakash and Bear (1986) as well as Stephen and Proffitt (1991) (cited in Chunhachinda *et al.*, 1994: 74-75). Their study focussed on investigating the effect of investment horizon on portfolio performance following the argument that if the return distribution is not symmetrical, the CAPM-based two moment measures will not be appropriate to measure portfolio performance. They found evidence of skewness and kurtosis in the return distribution of the 14 international stock markets in their sample, thus indicating that the shape of the return distribution is rather asymmetrical. Therefore, they argued that the *higher moment performance measures* would be the more appropriate measures for evaluating portfolio performance. This is confirmed by the comparison made on portfolio ranking when the ranking produced by the alternative measures are found to be highly correlated as compared to portfolio ranking generated by the Treynor Index and the Sharpe Index.

Chen and Knez (1996: 513) claimed that a portfolio performance measure can only be accepted if it satisfies four conditions namely it assigns zero performance to each portfolio in some reference set and it is linear, continuous and nontrivial. They further argued that such conditions can only be achieved if the market strictly abides to the *law of one price* implying that there are no arbitrage opportunities. In their analysis, they found that there is room for arbitraging in the portfolio valuation measurement thus prompted them to propose an alternative measure known as the *no-arbitrage performance measure* (NA-based measure). The alternative measure is purportedly independent from the standard asset pricing equilibrium models hence they argued that it is free from any misspecification error.

In their attempt to address the shortcomings in the Jensen-*alpha* Index and the Sharpe Index particularly with regards to the benchmark problem, market timing and transaction costs, Murthi *et al.* (1997) introduced the *DEA portfolio efficiency index* (DPEI), a non-parametric approach based on the data envelopment analysis (DEA)

technique. Since the method does not require any benchmark specification, it is arguably impervious of benchmark error. The other advantage of the DPEI is that it is able to incorporate transaction costs explicitly into the model. Using the new method, they found that all the 2,083 mutual funds in their sample are approximately mean-variance efficient. Joro and Na (2006) used an extended version of the DEA method to measure portfolio performance under the mean-variance-skewness framework arguing that investors' preferences are better represented by the mean-variance-skewness case than the mean-variance framework of the CAPM. Unfortunately however, the results obtained from their analysis are rather inconclusive despite the complex and expensive computational programming involved.

Indro *et al.* (1999) proposed a non-linear approach for portfolio performance measures by applying a technique called the *artificial neural network* (ANN). Originally developed to study the biological neural network, particularly the functionality of the human brain, the ANN is modified to become a performance forecasting model by employing non-linear function mappings using a *multi-layer perceptron model* and a general purpose *non-linear optimiser* (GRG2) computational methodology as well as a heuristic model on specific fund characteristics such as fund return, turnover, price-earnings (P/E) ratio, price-book (P/B) ratio and market capitalisation as variables to predict fund performance. They argued that the forecasts generated by the ANN model are superior to the linear model with respect to growth and blend funds, however, the linear model surpasses the ANN model when analysing value-oriented funds.

Bowden (2000) introduced the *ordered mean difference* (OMD) as an alternative to evaluate portfolio performance arguing that the standard linear models failed to properly account for market timing ability as well as differences in investors' risk profile. The OMD procedure involves the running of the difference of means between return of a particular fund and return of a benchmark (such as the market portfolio) ordered by values of the benchmark, from which, the expected value known as the conditional ordered mean difference (COMD) can be used for measuring portfolio performance. While admitting that his study is "somewhat limited in scope" (Bowden, 2000: 219), it nevertheless reveals that some mutual funds were indeed able to outperform the market portfolio.

Pendaraki *et al*. (2005) proposed an integrated methodological approach using a two-stage *multicriteria decision aid* (MCDA) framework to construct and evaluate a portfolio of mutual funds. In the first stage, once the mutual funds have been identified based upon specific evaluation criteria, they are then evaluated and classified into appropriate groups using the UTADIS (UTilités Additives DIScriminates) classification method from which the best performing mutual funds will be selected to be included in the final portfolio. Subsequently, in the second stage, a goal programming method is employed to determine the necessary proportion of each of the chosen mutual funds in the final portfolio. They reported that the MCDA methodology has produced encouraging results using a sample of Greek mutual funds.

Choi (2006) suggested the *incentive-compatible* portfolio performance measure which links fund performance to the incentive structure of their respective fund managers. The proposed measure seeks to minimise the moral hazard problem in fund management industry by encouraging fund managers to maximise the return of their funds for higher managerial fees. However, in view of the infancy stage of the measure, his paper merely provides the theoretical foundations for the new measure but offers no evidence in terms of data analysis to support the theory empirically.

Despite lacking concrete results, what is obvious from the above studies is that the quest for finding an appropriate portfolio performance measures is still continuing. Arguably, the traditional portfolio valuation measures based on the mean-variance theory, particularly the Jensen-*alpha* Index and the Sharpe Index, remain popular among both the academics and practitioners which is attributed mainly to the simplicity and the elegance of the mean-variance efficiency theory as well as the lack of further analysis being carried out on the alternative measures either due to theoretical or empirical limitations or costs constraints. On a rather negative note, the availability of various portfolio performance measures with different valuation outcomes unfortunately makes the choice of the portfolio valuation method to be more difficult (see comment by Chunhachinda *et al.* 1994; and Chen and Knez, 1996).

Nevertheless, past literatures have highlighted the significance of the search for an appropriate portfolio performance measure to give fair valuation of fund performance which, in turn, reflects the actual capabilities and services rendered by fund managers. In

fact, the scope of study of fund managers' performance has expanded from the earlier focus of analysing portfolio return and risk to include broader issues involving trading microstructures (such as the persistency in fund performance and the impact of transaction costs) as well as the fund managers' special investment skills (such as market timing ability, stock picking talent and management styles). The following section discusses the issues in greater detail.

2.4 ANALYSIS OF FUND MANAGERS' PERFORMANCE

Following the seminal works by Treynor (1965), Sharpe (1966) and Jensen (1968), numerous studies have been undertaken to examine the performance of fund managers thoroughly. The keen interest towards this issue is understandable. Actively managed mutual funds account for about 90 per cent of the total $4 trillion invested in US domestic equity mutual funds in 2006 (Avramov and Wermers, 2006). Apart from the sheer size of public investment entrusted to fund managers, the fund managers themselves, being informed investors, are perceived to possess informational advantage as compared to the general investing public and hence, they become natural candidates for analysis related to portfolio performance. More importantly, the fund managers' performance is crucial to justify their very own existence. If the fund managers are not capable of generating sufficient return to compensate for the high management fees they charge their clients, or if their performance is not able to outperform even the return from a naïve buy-and-hold investment strategy, the role of the fund managers will certainly be in serious doubt as there will be no justification for engaging the service of such poorly performing fund managers. Although some might argue that fund managers do offer other forms of value added fund management services to their investors, the primary yardstick used for measuring fund performance is always the excess return generated by the fund managers for their clients rather than the other forms of fund management services. Studies on fund managers' performance also have significant implications on the other popular theories in finance such as the modern portfolio theory and the efficient market hypothesis theory.

Therefore, Jensen's (1968) initial findings that fund managers in general do not earn superior return over and above the passive strategy has shocked both the academic as well as investment communities and stimulated further debates not only on issues

pertaining to fund managers' underperformance but also on the validity of portfolio performance measurement models used to evaluate mutual funds' performance. Notwithstanding however, it is premature to generalise that all fund managers are not performing since, as the following section would reveal, subsequent studies on mutual funds performance over the last four decades have yielded rather mixed results with some studies appearing to support the Jensen (1968) findings while others found evidence of superior performance by fund managers.

2.4.1 Analysis of Fund Managers' Return Performance

Following Jensen (1968), numerous studies examining fund managers' return performance have been undertaken. The results however, are far from conclusive. Analysis by Henriksson (1984), Elton *et al.* (1993), Malkiel (1995), Murthi *et al.* (1997), Edelen (1999) and Moskowitz (2000) supported the findings by Jensen (1968) that fund managers are unable to outperform either the market index or the naïve buy-and-hold strategy. In fact, the trend is also observed in other countries based on the findings of fund managers' underperformance in Greece by Sorros (2001) and Artikis (2003), Japan (Cai *et al*., 1997) and Malaysia (Chuan, 1995; Mohamad and Md. Nasir, 1995; Hin and Wah, 1997).

Other studies however, are more favourable to fund managers. In a commentary paper, Renwick (1968) argued that the findings of mutual funds underperformance using valuation methods based on the Markowitz's mean-variance efficient framework are dubious due to possible bias caused by information asymmetries as well as their over reliance on *ex-post* data or historical prices. The information asymmetries occur when 'inside information' on a specific fund is not available to outside analysts that prevent a more accurate analysis on fund performance. He suggested that the *ex-ante* performance measures used by fund managers which contain 'inside information' will only be confined to in-house application and therefore, not available to outsiders. Instead, accessible to outside analysts are the *ex-post* performance measures such as the traditional portfolio valuation models that depend solely on the return and risk (standard deviation) relationship, which have clearly failed to account for the 'inside information' and hence suffer from the bias caused by omitted variables. Using the *discriminant analysis*

method, he claimed that it is possible to identify and differentiate on a consistent basis the performing portfolios with the average or underperforming portfolios. The superiority of fund managers' performance over the market portfolio or the passive buy-and-hold strategy is also reported by Simon *et al.* (1969), Ippolito (1989), Grinblatt and Titman (1992), Bauman and Miller (1994), Rahman (1994), Daniel *et al.* (1997), Leong and Lian (1998), Bowden (2000), Chen *et al.* (2000), Wermers (2000), and Khorana *et al.* (2007).

Another important issue in fund performance analysis that has captured researchers' attention is whether or not fund managers' performance is persistent over time. The persistence refers to the correlation between year-to-year return of a mutual fund. In this case, a top performing fund in the most recent year is said to exhibit persistent performance if it remained the best performing fund in the next consecutive year. Likewise, the reverse is true when a poorly performing fund in the most recent year continued to remain inferior in the subsequent year. The observed persistence in mutual fund performance has been documented by Grinblatt and Titman (1992), Hendricks *et al*. (1993), Bauman and Miller (1994), Malkiel (1995), Elton *et al*. (1996), Carhart (1997), Bers and Madura (2000), Chen *et al.* (2000) as well as Droms and Walker (2001).

Several studies have attempted to explain the persistence phenomenon. Hendricks *et al*. (1993) suggested the presence of 'hot hands' as the reason for the superior year-to-year return and 'icy hands' as the cause for the consistent poor performance by mutual funds. Elton *et al*. (1996) argued that the difference between the persistent performance of performing and underperforming funds is caused by fund managers' selection skills and fund expenses. Bers and Madura (2000) attributed the persistence to certain fund characteristics such as fund's expense ratio, experience and family grouping while Chen *et al*. (2000) contended that the phenomenon is best explained by the momentum effect. However, the evidence of persistence in mutual fund performance does not necessarily imply that investors could reap abnormal profit by designing an investment strategy that capitalised on the phenomenon. Malkiel (1995) and Carhart (1997) argued that the observed persistence does not contradict the efficient market hypothesis (EMH) in view of the insignificant abnormal profit which is just sufficient to cover for the fund expenses and transaction costs. The phenomenon is also robust only in a very short-term period and usually fades away in the successive year, and is more visible in poorly performing funds than in performing funds.

2.4.2 Analysis of Fund Managers' Investment Skills

The observed variation in mutual fund performances has prompted researchers to investigate the sources for the differential performance. In general, the scope of analysis can be divided into three areas related to fund managers' skills; namely their forecasting or market timing ability, their stock picking talent and their fund management style.

Jensen (1969: 170) reported that "mutual fund managers on average are unable to forecast future security prices" which is consistent with his earlier conclusion in Jensen (1968) that fund managers are unable to provide superior return for their investors. His findings were supported by Kon (1983), Chang and Lewellen (1984), Henriksson (1984), Chuan (1995), Sorros (2001) and Matallín-Sáez (2006). Contrary to these findings however, Grinblatt and Titman (1994) and Bowden (2000) found that some fund managers do possess market timing skill, albeit with limited capability, while Edelen (1999) contended that the validity of the negative market timing results as reported by past studies are suspicious since the methodologies applied in the studies did not take into account the impact of fund flows generated by investors' trading activities on fund performance. Therefore, no definite conclusion can be drawn yet, although the bulk of the studies have established that mutual fund managers in general do not have forecasting or market timing ability. Nevertheless, the issue would remain central to finance amid the remarks by Henriksson (1994: 73) that "the ability to earn superior returns based on superior forecasting ability would be a violation of the EMH and would have far-reaching implications for the theory of finance".

Mutual fund managers are found to possess stock selection ability as revealed by Elton *et al.* (1996), Daniel *et al.* (1997), Chevalier and Ellison (1999), Chen *et al.* (2000), Wermers (2000), and Avramov and Wermers (2006). Although their findings appears to be less conclusive in view that only a handful of fund managers have stock picking ability whilst the amount of the excess return from this trading strategy is rather small, it does support the claim that active fund managers do provide value added fund management services to their clients, nonetheless.

It has been suggested that fund managers' style could affect their funds' performance. Simon *et al.* (1969) argued that the observed consistency in the

performance of six closed-end funds that they studied is not simply due to a random occurrence, but instead, is attributed to good portfolio management. Cai *et al*. (1997) and Edelen (1999) found the adverse impact of fund flows from investors' trading activities particularly on the performance of open-ended funds. This certainly does not augur well, particularly for open-end mutual funds since the low-cost liquidity service is one of the primary facilities provided by these funds to their investors (see Edelen, 1999: 441). Khorana *et al*. (2007) analysed the relationship between fund managers' ownership and fund performance. They found evidence of positive correlation characterised by higher excess return generated by mutual funds as the ownership stake of their fund managers increases. This finding adds up to the point made earlier by Stracca (2006) on the nature of the principal–agent relationship between fund managers and their investors. A recent paper by Thomas *et al.* (2007) reveals a growing influence of socially responsible investment (SRI) among both the fund managers as well as general investors which may have direct impact on fund subscription, investment and performance.

2.5 THE CONVENTIONAL PORTFOLIO MEASUREMENT MODELS: A REVIEW

Past studies related to portfolio performance measurement have revealed the dominant role of the modern portfolio theory as well as the valuation methods derived from the mean-variance framework. Although popularly used in both academic and real world applications, the validity of the valuation methods however, remains under scrutiny. This is obvious from the literatures challenging the Markowitz's portfolio theory and the CAPM, in particular, as well as the development of alternative portfolio performance measures to overcome the weaknesses in the existing mean-variance models so as to give a more accurate assessment of fund managers' performance. Many of the significant findings from studies related to portfolio performance valuation have been discussed above. This section attempts to summarise and offer further insights on this issue.

In his comment on the Markowitz's portfolio theory, Renwick (1968) suggested that the application of the model is too mathematical and is seriously constrained by the huge amount of input data required by the model whilst the results might be biased due to the over reliance on variance (or standard deviation or coefficient of variation) as the sole

measure for risk. Elton *et al*. (1977) stressed on the point further when they argued that the solution on actual portfolio problems using the Markowitz's approach is highly time consuming and costly. In addition, there are difficulties in educating portfolio managers to understand the return and risk relationship from the covariance perspective. These factors, they contended, have "brought the application of portfolio theory to a halt" (Elton *et al*., 1977: 329).

Numerous studies have highlighted the deficiencies in the CAPM and its variant models. The major shortcomings apparently come from the model's strict assumptions, especially the equal lending and borrowing rates as well as the efficiency of the market portfolio. The CAPM is also arguably prone to mis-specification error due to its sensitivity to the benchmark used as proxy. It has also been proven that beta alone is not the single factor that affects securities returns as other variables such as macroeconomics data, the characteristics of the securities and various market anomalies may also affect return performance. In regards to this, Renwick (1968), Fama and MacBeth (1973), Markowitz (1991) and Sharpe (1994) have questioned the long-established presumption that mean and variance are sufficient variables for portfolio performance valuation. The other challenge that seems to keep portfolio theory in a state of limbo is that all tests pertaining to portfolio performance within the mean-variance approach are, in fact, a joint hypothesis test between the validity of the portfolio performance valuation models used and the market efficiency. Notwithstanding however, despite the various shortcomings in the mean-variance based models, they remain relevant and are popularly used in the portfolio performance analysis.

Recent studies have shed some new perspectives on the course of portfolio performance valuation. The availability of a more comprehensive database comprising individual portfolio's stocks and fund characteristics as well as historical price data coupled with the use of more sophisticated computer programming might offer new insights into portfolio theory which may even challenge the validity of some of the more established findings. For example, Sennetti (1976) has questioned the wisdom of using the expected utility theory to solve a financial asset selection problem as undertaken by Bernoulli (1738). In addition, as compared to past studies which have relied heavily on return and risk variables and used limited time series data (most studies used monthly price data with shorter time period), studies undertaken in recent years have utilised daily

price data covering longer time periods and took into account fund characteristics such as investment objectives, fund managers' profiles and management style, and trading microstructure. The use of a more comprehensive database significantly helps to enhance the accuracy of the fund performance analysis. To conclude, as long as a new alternative portfolio valuation model that is acceptable to both academics and practitioners alike to replace the current models is not available, the search for a better asset pricing model is poised to continue. In the meantime, the existing portfolio performance measures are set to prevail in spite of their various shortcomings.

2.6 CONCLUDING REMARKS

This chapter has highlighted the development of the modern portfolio theory particularly with regards to the analysis of mutual fund performance. Beginning with the works by Markowitz (1952) and Tobin (1958), the modern portfolio theory has expanded further into the asset pricing theory through the discoveries of the CAPM and the APT which, in turn, paved the way for the development of portfolio performance measures most notably the Treynor Index, the Sharpe Index and the Jensen-*alpha* Index. Numerous studies have attempted to develop alternative measures beyond the mean-variance framework of the modern portfolio theory. Alas, all the fund performance measurement models produce rather mixed results thus making the choice of the valuation models and analysis of fund performance a more difficult task. The past four decades of research have also witnessed the scope of studies of portfolio performance broadening from analysis of return performance to analysis of fund managers' investment capabilities. Despite the extensive research however, the truth about fund performance and fund managers' ability remain elusive due to various theoretical and empirical limitations inherent in the existing valuation models. Notwithstanding however, the traditional portfolio performance measurement models derived from the mean-variance framework continue as the dominant methods in the valuation of portfolio performance. The traditional valuation models are also widely applied across various types of funds with different investment mandates such as ethical- or Islamic-oriented funds. The following chapter discusses the analysis of ethical- and Islamic-based investment portfolios.

Chapter 3

UNDERLYING PHILOSOPHY AND PERFORMANCE OF ETHICAL FUNDS AND ISLAMIC FUNDS: A LITERATURE REVIEW

3.1 INTRODUCTION

Ethical issues have long become one of the most debated topics in the economics and finance domain. Since ethics is usually viewed as inconsistent with the pecuniary motives of a rational economic agent, embracing it, argued its opponents, would entail financial sacrifice due to the presence of 'ethical cost'. On the contrary, the proponents of ethical values claimed that incorporating ethical criteria into economic and financial decisions would benefit both the business entities concerned as well as the general public and the environment by creating higher demand on the products of ethically-oriented companies while promoting social stability and improve the quality of life of the society involved. Despite the conflicting views, ethics remain an integral part of the economic and finance processes. Adam Smith (1723–1790), who is popularly known as the father of modern capitalism, in his book *The Theory of Moral Sentiments* promotes altruistic behaviour when he suggests that to attain wisdom and virtuousness, an individual should be willing to sacrifice his/her own private interest in favour of the greater interest of the society, the state and the universe. Further, he argues that *social* and moral norms encourage social stability which, in turn, contributes to the expansion of human civilisation (see Kuran, 2006: 78). It has also been widely acknowledged that ethical values could influence an economic agent's decision significantly. Hence, as eloquently phrased by Etzioni (1988, cited in Lewis and Cullis, 1990: 395) that "economics has a moral dimension", it would be rather futile especially for profit-oriented companies to completely ignore the importance of ethical criteria when making economic or financial decisions amid the growing concern among the contemporary investing public towards ethically-related issues as reflected by the increasing demand for companies to show higher corporate social responsibility and good governance as well as greater respect for human rights, animal rights and environmental sustainability. In view of the growing

interest towards socially-oriented investments, this chapter elaborates on the nature, performance and issues surrounding ethical as well as Islamic funds.

3.2 REVIEW OF ETHICAL FUNDS

This section provides a comprehensive review of ethical funds including the background of the funds, the rationale for investing in ethical funds, the criticisms and the analysis of performance and valuation of ethical funds.

3.2.1 Background, Definition and Concept

Investment with ethical consideration was initially pioneered by church investors in the US in 1926 and in the UK in 1948 (Sparkes, 2001). Hence, it is hardly surprising when Statman (2005: 14) suggests that "the origins of socially responsible investing lie in religion". The current form of ethical investment however, was emanated by the socio-political events in the late 1960s and early 1970s following the rise of human rights activism, particularly the public campaigns against the Vietnam War and the apartheid regime in South Africa, as well as the growing sense of altruisms and greater awareness on consumerism, human rights, animal rights and environmental protection. Once again, church investors particularly the UK-based Methodist Church have led the shift towards ethical investment when it established funds that shunned investment in companies with an interest in armaments, alcohol, gambling, tobacco or South Africa in 1960 (see Sparkes, 2001; 2002; Kreander and McPhail, 2004; Bauer *et al*., 2005; Statman, 2005).

From its noble beginning, ethical investment in the last four decades has registered spectacular growth both in terms of the number of funds created as well as the size of its investment value. It has also expanded beyond its traditional markets of the US and the UK when it attracted investors in Australia, Canada, Japan and some other European countries. Despite its tremendous growth however, there is no consensus on the actual value of the size of ethical investment worldwide as shown by the varying figures reported. Nevertheless, more reliable data is available for more mature markets such as the US and the UK. In the US, socially responsible investing (or SRI) - the US

terminology for ethical investment – has grown by 324 per cent from US$639 billion with just 55 funds in 1995 to US$2.7 trillion with a total of 260 funds in 2007 (SIF Report, 2007). In 2009, the asset value of SRI investments has increased to US$3.7 trillion. Similarly, ethical investment in the UK has also recorded a substantial growth from a mere £372 million in 1992 to £6.1 billion by the third quarter of 2010. Although the growth rate appears to be impressive, the market share of ethical investment however, is still relatively small when compared to the overall size of the professionally managed investment funds. In the US example, SRI funds account for just 11 per cent of the total assets under professional management which stood at US$25.1 trillion in 2007. Another estimate has put the market share of ethical funds at around merely 0.5 per cent (Haigh, 2006: 268). Nevertheless, the small but growing market share of the ethical funds proves only one thing: that the future potential of ethical investment is indeed enormous!

One fundamental issue that has yet to be resolved satisfactorily is: what does the term 'ethical investment' really mean? Although the words 'ethical' and 'investment' look straightforward, the term 'ethical investment' however, is rather vague and to define it in a way that will give a precise description for its investment requirements, practices and performance measures is more difficult, unfortunately. The vagueness of the term is mainly due to the subjective nature and the diversity of ethical considerations whilst the investment practices and valuation methods could vary depending on one's personal values or beliefs (see Sparkes, 1995; 2001; Gregory *et al*., 1997; Heinkel *et al*., 2001; O'Rourke, 2003; Jin *et al*., 2006). This dilemma is not only faced by professional fund managers, even the government finds it difficult to define or specify the legal requirements for 'ethical investment' (Sparkes, 2001: 195).

The various terminologies used to describe ethically-oriented investment reflect this difficulty. While the term 'ethical investment' is widely used in the UK, 'socially responsible investing' (or SRI) is the more preferred terminology in the US whilst other European countries called it 'sustainable investing' or 'green investing' (Kurtz, 2005: 125). The choice of terminology is influenced by the historical background and the local value of such investment. In the UK, the term 'ethical investment' is preferred because the investment is strongly associated with religion through the significant role of church investors who pioneered ethical investment in the country. However, the terminology, which also indicates restrictive approach in the imposition of certain 'positive' and

'negative' ethical criteria in deciding whether to accept or avoid certain stocks or industries, is not popular in the US. Instead, the US investors favour the term 'socially responsible investing' (or SRI) which signifies the pivotal role of investors as the shareholders and the ultimate owners of the company to encourage (or force) the company in which they invest their money to act in a more socially responsible manner in the course of the company pursuing its corporate objective to maximise profit. Since the term SRI gives broader dimension to investors' own responsibility, the term is considered as more descriptive and is poised to replace the term 'ethical investment' in the future (Sparkes 1995; 2001). Despite the different terminologies however, it is generally accepted that ethical companies are those that promote positive social, religious, environmental, and internal governance outcomes while non-ethical companies are those involved in 'sin' activities (such as gambling, liquor and pornography), tobacco, military armaments, nuclear power and animal testing.

In defining 'ethical investment', some authors have contented with a simple but direct definition. Lewis and Cullis (1990: 397) refer ethical investment as "investment with attractive or desirable social characteristics". Mallin *et al.* (1995: 484) state that an ethical fund is "one which has either stated *negative* criteria or *positive* criteria".[5] Sparkes (1995), Tippet (2001) and Barnea *et al.* (2005) define it as an investment approach that combines both the ethical and financial criteria in the making of investment decision. Perhaps the more elaborate definition yet is the one given by Cowton (2004: 249) when he describes ethical investment as:

> ... a set of approaches which include social or ethical goals or constraints in addition to more conventional financial criteria in decisions over whether to acquire, hold or dispose of a particular asset, particularly publicly traded shares.

With regards to SRI, Sparkes (2002) defines it as:

> ... equity portfolios whose investment objectives combine social, environmental and financial goals. When practised by institutional investors this means attempting to obtain a return on invested capital approaching that of the overall stock market.

[5] Indeed, the terms *negative* and *positive* criteria are also vague depending on a fund's ethical objectives. Some funds may even employ both criteria simultaneously in their decision-making process.

A definition by the Social Investment Forum (SIF) states ethical investment as "an investment process that considers the social and environmental consequences of investments, both positive and negative, within the context of rigorous financial analysis" (see Boasson *et al*., 2006: 838). The commonality in the concept of ethical investment and SRI as reflected from the definitions indicates that the two terminologies are practically referring to the same investment approach or style thus prompting some researchers to even use the two terminologies interchangeably.

Although there are many ways to define 'ethical investment', the essence of ethical investment however, is clear. First and foremost, apart from the fundamental objective of pursuing positive future monetary return, ethical investment also attempts to achieve certain non-pecuniary rewards that would yield social and environmental benefits. On the implementation side, an ethical investment's policy would have a set of pre-determined ethical criterion which will be used in the screening and stock selection process to determine the admissibility of a particular asset or stock into its portfolio with the help of an independent ethical advisory board. In this respect, ethical investment is distinguishable from ordinary or traditional investments especially in terms of their investment objectives, policies and practices. Table 3.1 below highlights the comparison between conventional, ethical and Islamic investment.

In most cases however, it is an individual's personal values or the fund's ethical objectives that determine the securities selection process as well as the final decision whether to invest in particular securities, or otherwise. The imposition of ethical criteria would effectively deny ethical investors crucial access to all securities or from investing in a company that is deemed to be un-ethical by virtue of the company's involvement in disapproved activities regardless of whether the potential return from investment in this 'non-ethical' company is huge. In other words, ethical investors may willingly forego positive future monetary return – which is much to the disapproval of a rational economic man – in favour of their belief in ethical values. Hence, one intriguing question arises: are ethical investors irrational? The following discussion attempts to investigate the motives behind ethical investment.

Table 3.1: Comparison between Conventional, Ethical and Islamic Investments

No	Key Areas	Conventional Investment	Ethical Investment	Islamic Investment
1	Main purpose of investment	The investment seeks to maximise financial return only.	The investment seeks financial return while pursuing ethical motives.	The investment seeks financial return while conforming to *Shariah* law.
2	Investment policy	Investment policy does not make any specific reference to socially-oriented concern.	Investment policy is guided by a clearly stated ethically-oriented or socially responsible investment policy.	Investment policy is guided by the *Shariah* principles.
3	Securities selection process	Securities selection is made solely based on the characteristics of the securities that suit the objectives of the investment but without reference to any specific socially-oriented considerations.	Ethical criteria is clearly identified which will served as the filtering mechanism in securities selection process or when deciding whether to invest or to avoid a particular asset or stock.	*Shariah* guidelines are used as the screening mechanism in securities selection process to ensure only *halal*-approved securities are selected whilst non-*halal* securities are avoided.
4	Asset universe	Unlimited. All securities can be selected or admitted into the conventional portfolio.	Limited. Only securities that fulfil the pre-determined ethical criteria will be selected.	Limited. Only the approved *Shariah*-compliant securities are allowed for investment.
5	Investment support services	Only requires investment research support services to search for undervalued securities and monitor the investment performance.	Requires the following services: 1. Ethical board to screen, monitor and make decision on securities admissibility or withdrawal. 2. Research team to search for potential securities and monitor fund's performance.	Requires the following services: 1. *Shariah* advisory board to screen, monitor and make decision on securities admissibility or withdrawal. May also requires *Shariah* officer to supervise and monitor *Shariah*-compliancy. 2. Research team to search for potential securities and monitor fund's performance.
6	Shareholders' activism	Shareholders/investors do not play active role in advising company to act ethically or socially responsibly.	Shareholders/investors play active role in ensuring company's activities remain within ethical boundaries.	Shareholders/investors do not always play active role in advising company to act within *Shariah* principles.
7	Type of investors	Economic rational individuals who typically prefer more profit and low risk.	Ethically-concerned or religious investors.	Religious or ethically-concerned investors.

3.2.2 The Rationale for Investing Ethically

The modern portfolio theory assumes that an individual is an economically endogenous agent who always prefers more profit to less and is risk averse. Consequently, a rational economic agent is thought to be only interested with maximising financial return and concerned only with over his or her investment risk without any inclination to consider ethical or moral values whatsoever when making an investment decision. Standard economic theory however, has never insisted that an individual's utility be maximised solely through financial return. Rather, it is the difficulty in measuring non-monetary return accurately which led to the cautious acceptance of any performance valuation model that attempt to incorporate subjective values. This also explains why the conventional performance valuation models which utilise financial return as the basis for performance measurement remain as the preferred and dominant valuation methods.

Nevertheless, at least in the case of unit trust or mutual fund investment, there are burgeoning studies challenging the traditional view of the single-minded, profit maximising investor. Studies by McKenzie (1977), Lewis and Cullis (1990), Cullis *et al*. (1992), Anand and Cowton (1993), Winnett and Lewis (2000), Basso and Funari (2003), Beal *et al*. (2005), and Lydenberg (2007) revealed that there is more than just economically rational man around and, in the case of ethical investors, the desire to fulfil ethical needs is equally important to these investors as is maximising return from their investment. Cowton (1994, cited in Sparkes, 2001; 196-197) has aptly described the motivation of the ethical investor as to:

> ... care not only about the size of their prospective financial return and the risk attached to it, but also its source – the nature of the company's goods or services, the location of its business or the manner in which it conducts its affairs.

Beal *et al*. (2005) suggested three reasons for ethical investment namely to gain superior financial returns, to achieve non-wealth returns and to contribute to social changes. In a more recent study, Lydenberg (2007) argued that contemporary investors can be categorised into three groups namely: Universal Investors, Social Investors and Rational Investors. While Rational Investors is representative of traditional investors who merely seek to maximise profit, Universal Investors and Social Investors are the two groups of

investors who are also concerned about the return to the economy and the society as well. It was further argued that with the rising popularity of Universal Investors and Social Investors, ethical- or SRI-oriented investment is poised to develop further both in theory and practice, thus opening the possibility for non-pecuniary rewards to be properly measured and incorporated into the valuation of investment return in the future.

Another factor that motivates investors to invest ethically is related to religious faith. McKenzie (1977) suggested that the belief in God's existence would encourage an investor to adopt certain moral values or ethical principles which will be translated into his or her behaviour including when making an investment decision. The influence of religion in ethical investment has been documented by Kreander and McPhail (2004), Statman (2005), Boasson *et al.* (2006), Porter and Steen (2006), and Ghoul and Karam (2007). In fact, ethical investment in the UK and the US was historically initiated by the church. Since all religious teachings promote good deeds and virtuous behaviour, ethically-oriented investment would become the natural choice for the more pious investors to channel their investment regardless of their religious faith. There are even mutual funds established specifically on religious bases such as the Amana Fund and the Ave Maria Catholic Values Fund which were created to cater for the investment needs of Muslim and Christian investors, respectively.

The vast interest towards ethical funds is also attributed to investors' positive personal values which stimulate public demand for socially responsible investment. Either being motivated by a growing sense of altruism, religious belief, or influenced by social or environmental activist movements, more investors are now incorporating ethical values into their decision-making process thus creating substantial demand for ethically-oriented investments. Lewis and Cullis (1990) stated that the rise of consumer activism and higher consciousness towards corporate social responsibility alter investors' value preferences which, in turn, encourage the growth of ethical investment. Sparkes (1995) associated the higher demand with the rise in 'green consumerism' as reflected by the increase in consumer awareness on environmental and animal rights issues in the 1990s. O'Rourke (2003: 692) attributed the phenomenal growth of ethical investment to "its ability to symbolise and promote 'good' corporate environmental and social behaviour". Whatever the motivation might be, the spectacular growth of ethical funds both in terms of the number of funds launched in the market and the total investment value over the last

three decades signifies the prevailing strong interest towards ethical investment and indicates the huge prospect awaiting this segment of the market.

To conclude, rather than thinking of ethical investors as economically irrational individuals, past studies proved that in so far that their economic pursuit is concerned, ethical investors are actually akin to the rational economic man revered in financial economic theory. It is simply their noble intention to pursue non-pecuniary rewards which yield social and environmental benefits and promote greater internal governance and corporate social responsibility that differentiate ethical investors from traditional investors. Can the ethical objectives be achieved without additional costs to ethical investors? The following discussion thus ensues.

3.2.3 Critics on Ethical Investment

All the noble intentions aside, ethical investment is indeed, not immune to criticisms. Barnea *et al*. (2005) argued that although SRI investors are able to influence polluting companies to reform, this also discourages companies from making new investment, thus resulting in lower total investment in the economy. Munnel and Sunden (2005) raised doubt about the actual reason for pension funds' buying of SRI-based mutual funds, even suggesting that political agendas, particularly from ambitious politicians involved in pension funds operation with intention to reap political benefits from the rising popularity of SRI investments, are behind the pension funds' purchases of SRI mutual funds. More significantly, critics have doubted the real motive of ethical investors and assert that financial return remain the most significant factor even for ethical investors. They argue that when a trade-off between ethical values and financial return is involved, the former is set to give in to the latter as ethical investors are ready to alter their priority by shifting their investment from ethical funds to conventional funds upon expecting lower return from their investment in ethical funds. Bernstein (2006) stated that although non-economic satisfaction can be achieved from ethical behaviour, monetary temptation can easily induce finance and corporate practitioners to behave unethically. In another study, Sparkes (1995) reported the outcome of opinion polls conducted among SRI investors that reveal only 35 per cent of the investors would continue to invest in SRI funds if the anticipated financial return from these funds fell below the non-SRI funds. His finding is

supported by Mackenzie and Lewis (1999), Sparkes (2001) and Bollen and Cohen (2004, cited in Kurtz, 2005: 134) who claimed that ethical investors will not hesitate to reduce their investment in ethical funds if the potential return is significantly lower than the return of non-ethical funds. However, somewhat coming as a defence to ethical investors, Hollingworth (1998, cited in Torres *et al.*, 2004: 203), Webley *et al.* (2001), and Fischer and Khoury (2007) insist that ethical investors are committed investors with genuine intention to pursue ethical objectives and they are prepared to accept lower financial return from their investment while holding on to their ethical beliefs.

The willingness to sacrifice ethical values in favour of higher financial return is not unique to ethical investors but is also observed in ethical fund managers. Labelling the offer of ethical fund as a mere 'camouflage play' by fund managers, Haigh (2006) argued that the fund managers would rather forego their ethical objectives than risking accepting lower investment return. His claim is based on the fund managers' confession that pursuing financial return is still the utmost important objective to ensure the survival of their funds. Even more surprising, ethical consideration is deemed as just a 'secondary importance' to some fund managers selling ethical investment products (Haigh, 2006: 274). Prior to Haigh (2006), the real motive of ethical fund managers has also been questioned by Lewis and Cullis (1990), Davis (1996) as well as Cowton (1994) and Anderson *et al.* (1996) (both were cited in Sparkes, 2001: 197) when they contended that ethical fund is essentially an innovative marketing tactic for product differentiation by fund managers, or used as their strategy to capitalise on the growing demand for ethically-oriented investment. Alas, the findings imply that the sole purpose of fund managers offering ethical investment products is to maximise profit rather than for genuine intention to promote ethical causes or behaviour.

Critics have also highlighted two disadvantages of ethical investment which they alleged are the roots of ethical fund's underperformance. First, they argued that ethical investment incurs higher operational costs due to the need to appoint ethical consultants for the fund's ethical advisory board as well as to hire investment analysts to search for underpriced securities and to monitor the fund's portfolio continuously to ensure compliance with the fund's ethical policies. Secondly, they argued that ethical screening would result in ethical funds holding less efficient portfolio since it denied ethical funds access to the entire investment asset universe and restricted their securities' selection to

certain ethically-approved securities. In the context of modern portfolio theory, such restriction, the critics said, may result in ethical investors holding a suboptimal portfolio (see Kurtz, 2005: 127). Schwab (1996) argued that since ethical screening deprives ethical portfolio its choice and flexibility, it must bring additional cost to ethical portfolio. These shortcomings give rise to the *cost-of-discipleship hypothesis* which states that "to live (and invest) by a set of standards different from those of the surrounding culture entails opportunity costs" (see Mueller, 1994).

One particular outcome of the ethical screening process which becomes a common feature of ethically-oriented portfolios as reported by Luther and Matatko (1994), Sparkes (1995), Gregory *et al.* (1997), Wilson (1997) and Scholtens (2005) is the high concentration of investment in stocks of smaller size companies. Similar observation was also reported by Marlin (1986), Manchanda (1989) and Luther and Matatko (1994) as cited in Tippet (2001). The high concentration of small-capitalised companies means that ethical funds are investing less in large-capitalised stocks. This phenomenon can be explained like this: Large-capitalised companies are usually diversified conglomerates with various business interests undertaken through their subsidiaries or associate companies. Consequently, they are more susceptible to being excluded from ethically-oriented portfolios due to their indirect involvement in non-ethical activities through their subsidiaries or associate companies. In addition, some large-capitalised companies are those involved in what is deemed as 'sin' activities such as alcohol, tobacco and gambling, or 'harmful' activities such as military armaments and nuclear power. However, since these companies are usually heavyweight stocks with strong fundamentals and sustainable earnings, their exclusion from ethical funds means that the funds are deprived from investing in stable and profitable companies, a point stressed by Tippet (2001: 177) when he concluded that:

> ... if investors screen for companies that offend because of the first type of issue **(i.e. the nature of the company's product or service)**, they are likely to be excluding profitable companies and, therefore, to bear a financial cost. (clarification is researcher's)

Lewis and Cullis (1990), Gregory *et al*. (1997) and Geczy *et al.* (2005, cited in Schröder, 2007) argued that higher operational cost and lack of diversification benefits affect ethical funds' return adversely. Sparkes (1995), Sauer (1997) and Schröder (2007) however, disagreed. The following section attempts to examine the issue further by analysing past

literatures on ethical fund performance and the valuation techniques used for performance measurement purposes.

3.2.4 Ethical Fund Performance and Valuation Method

This section examines the ethical fund performance and valuation methods used in past studies. Studies suggesting that ethical funds could outperform conventional funds albeit at varying degrees of significance can be found in Luck and Pilotte (1993), Mallin *et al.* (1995), Sauer (1997), Statman (2006), Fisher and Khoury (2007), Luck (1998) and Waddock and Graves (1997) (both were cited in Kurtz, 2005) as well as Abramson and Chung (2000), D'Antonio *et al*. (2000) and Tsoutsoura (2004) (all were cited in Boasson, *et al*., 2006). It was also observed that the ethical funds' superior performance occurred mainly during bullish market period and it was highly correlated with the performance of smaller capitalised stocks and the market index. The past studies however, offered no convincing explanation apart from attributing the better performance to the growing interest in ethically-oriented investments and to the *small firm effect*. On the contrary, Luther and Matatko (1994), Gregory *et al.* (1997), Tippet (2001), Farmen *et al.* (2005) and Chong *et al*. (2006) found that ethical funds generate lower return which they argued as caused by higher operational cost and poor diversification. Meanwhile, studies by Statman (2000; cited in Bauer *et al.*, 2006), Bauer *et al.* (2005), Bello (2005), Kreander *et al.* (2005), Scholtens (2005), Vermeir *et al.* (2005) and Bauer *et al*. (2006) found that the difference in return between ethical funds and conventional funds is not statistically significant. Similar findings were also reported by Boasson *et al*. (2006) and Schröder (2007) when they compared the performance of ethical funds vis-à-vis the market index.

With regards to portfolio performance valuation methods, the three standard measures namely the Jensen-*alpha* Index, the Sharpe Index and the Treynor Index have been used extensively in the analysis of ethical funds' performance. Either one or more of the standard portfolio performance measures were used simultaneously to generate a more robust analysis. Some researchers employed a combination of the traditional models with other valuation methods such as the Fama and French (1993) model (see for example Vermeir *et al.*, 2005; Boasson *et al*., 2006; Fisher and Khoury, 2007), the Carhart (1997) 4-factor model (see for example Bauer *et al*., 2005; Scholtens, 2005) or

the ARCH model (see for example Chong *et al*., 2006). Notwithstanding however, in view of the various performance measures available, extra caution should be exercised especially when applying more than one methodology since conflicting results might emerge. Scholtens (2005) for instance found that SRI performance is superior when using a CAPM index model but the opposite is true *i.e.* conventional funds outperformed ethical funds when the Carhart (1997) 4-factor model is used, instead.

Since there is general feeling that the traditional portfolio performance measures may not be absolutely appropriate for use in evaluating ethical funds' performance due to the presence of ethical components that are not properly captured or accounted for in the standard models, some researchers have proposed alternative valuation techniques such as the data envelopment analysis (DEA) approach (see Basso and Funari, 2003) and the Value-at-Risk (VaR) model (see Al-Zoubi and Maghyereh, 2007). Another popular valuation technique is the *matched pair analysis* as adopted by Mallin *et al.* (1995), Gregory *et al*. (1997), Statman (2000) and Kreander *et al.* (2005) which allows for direct comparison between ethical funds and conventional funds.

To conclude, results from past studies on ethical funds' performance are rather mixed and inconclusive. At present, researchers are divided in their findings with some researchers claiming that ethical funds are able to outperform conventional funds and even beat the overall market return while other researchers believe otherwise or have a view that any difference in return performance between ethical funds and non-ethical funds would only be marginal and statistically insignificant. Notwithstanding however, those findings in favour of ethical funds do provide encouraging evidence that ethical funds are a viable investment instrument. The contradictory results were mainly due to the different data sets or sampling used by past studies, the market condition during which the studies were undertaken and the research methodology applied by the studies. The following section discusses certain issues in the valuation of ethical fund performance.

3.2.5 Issues in the Valuation of Ethical Funds Performance

One salient feature of ethical funds as observed from past studies is the high exposure to small-capitalised companies due to restrictions on asset selection caused by ethical screening. Studies by Luther and Matatko (1994), Gregory *et al*. (1997), Tippet (2001) and Bauer *et al*. (2005) for example revealed that ethical funds' portfolio is dominated by small-capitalised stocks. Hence, it was argued that returns of ethical funds may reflect what is known in finance literatures as the *small firm effect* – a return phenomenon which is associated with investment characteristics or trading behaviour inherent in small-capitalised stocks particularly the varying degree of return and risk volatility in different market condition – especially considering that ethical funds outperformed conventional counterparts only in bullish stock market, but underperformed in bearish stock market. Sparkes (1995) however, dismissed this claim. He contended that although ethical portfolio exhibits high concentration of investment in small-capitalised companies, the superior performance of ethical funds is primarily due to the *information* and *positive selection* effects. To substantiate his argument, Sparkes (1995) referred to several of the UK large ethical unit trusts that have managed to sustain their performance during 1991 to 1993 period despite poor performance by small companies-based funds and he attributed the success to the ability and skills of these ethical funds to choose quality stocks for their portfolio backed by extensive research during the stock selection process.

The high concentration towards small-capitalised stocks in ethical funds' portfolio raises two crucial issues related to the optimality of ethical funds' diversification and the accuracy of the funds' performance valuation. It was argued that ethical screening reduces the funds' investment asset universe, of which, the exclusion of large-capitalised stocks and the high exposure in small companies' stocks are allegedly among the consequences of the ethical restrictions, thus resulting in ethical funds unable to achieve an optimum diversification. It was further argued that the lack of diversification affects return from ethical funds adversely. Some researchers however, contended that the claims against ethical screening are somewhat misleading. Instead, the dismal performance of ethical funds is attributed to the inferior asset selection skills on the part of the fund managers. Moreover, the inability to outperform the overall market's performance is not unique to ethical funds alone. As discussed in the previous chapter, there are numerous studies related to the efficient market hypothesis (EMH) that provide

evidence of below market performance of unrestricted funds. Past studies also reveal that fund managers, in general, possess limited timing ability and stock selection skills. Therefore, it was suggested that it is not the ethical screening or the lack of diversification that caused ethical funds to underperform, but rather, all fund managers for that matter – whether restricted or not – are generally unable to beat the market on a consistent basis (see Sparkes, 1995: 104). By referring to the data showing positive long-term performance of UK ethical charity funds, Sparkes (1995: 111) argued that "the ethical investment restrictions had no negative impact. In fact, they appeared to give a positive boost to investment performance". Furthermore, Kritzman and Page (2003) asserted that the most valuable skill for fund managers is the stock selection skill and not the asset allocation skill.

Though the high concentration towards small company stocks may be viewed as a by-product of ethical screening, it should not be construed as a material weakness of ethical funds. As far as the portfolio approach is concerned, ethically-oriented investment represents just another type of specialised investment which adopts ethical values as its investment policy or mandate. In this respect, ethical funds are not very much different from the other specialised investments such as growth funds, value funds, income funds, balance funds or index-linked funds, to name just a few, since all these conventional funds also applied certain criteria in their asset allocation strategy and stock selection process based upon their respective investment mandate. Therefore, if the claim that such bias in securities selection or concentration in certain types of securities led to portfolio underperformance is blindly accepted, one can jump to a conclusion that by imposing certain criteria on investment portfolio, all specialised funds will end up holding a poorly diversified portfolio, and hence are destined to perform below the market index! Fortunately however, past studies have shown that such arguments do not appear to be sensible or accurate.

Another crucial issue concerning ethically-oriented investment is related to the valuation of ethical funds' performance particularly with regards to the choice of an appropriate benchmark for measuring the performance. Except for studies undertaken through interviews or survey questionnaires, most of past studies employed secondary time series data and empirical modelling to measure performance. Under this methodology, the usual practice is to calculate the return of the ethical funds based on

their monthly closing prices, then the return is regressed with a standard asset pricing equilibrium model derived largely from the CAPM. Hence, a key index must be chosen to represent the market portfolio which raises a concern on which index is appropriate for the ethical funds. Past studies frequently choose the broader stock market index, such as the S&P 500 and the FTSE All-Share Index, as proxy for the market portfolio. The approach however, may not be appropriate in light of Scholten's (2005) findings that SRI sector indices have more explanatory power to SRI funds' performance than conventional indices. Moreover, considering that ethical funds' portfolios are dominated by small-capitalised stocks, the use of the key broader market index comprising of blue-chip companies or large-capitalised stocks may result in a downward bias in the form of ethical funds' underperformance. To mitigate the problem, Luther and Matatko (1994) and Gregory *et al*. (1997) have proposed the use of both the key broader market index and the small-capitalised stocks index when evaluating ethical funds' performance.

3.2.6 Conclusion

Based on the above discussion, it can be concluded that ethical investment is an investment approach that combines both financial and ethical considerations into investment decision-making process with a noble intention to maximise both the monetary rewards as well as non-monetary benefits. Although past literatures on ethical funds' performance produce rather inconclusive results, there is clear evidence that the interest towards ethical funds will continue in the future on the back of the rising altruisms and the growing concerns towards ethically-oriented investment among contemporary investors. Perhaps, rather than looking into ethical investment in isolation, it might be more appropriate to consider ethical investment as just another type of specialised investment, for which, its performance is also subject to common factors inherent in fund management activities that affect return performance. As of a particular interest of this study, this chapter continues with a review of Islamic funds.

3.3 REVIEW OF ISLAMIC FUNDS

This section gives a detailed review of Islamic funds including the background, the characteristics and the analysis of performance of Islamic funds as well as discussion on several important issues related to the funds.

3.3.1 Background, Definition and Concept

Whether stimulated by the sincere desire to fulfil religious duty for the Muslim populace or simply an ingenious marketing ploy, Islamic finance has somehow emerged successfully either as a viable alternative or as a complement to conventional finance. Regardless of the true intention however, the development of Islamic finance is crucial particularly to the Muslim community in view that Islamic teachings are not merely confined to the ritually-oriented relationship between God and human *per se* but also encompass the role of a man as the vicegerent of the God in this world. Therefore, apart from the religious rituals, Islamic teachings have also outlined the relationship between a man and his fellow human beings, including their social, economic and political affairs, as well as with his environment to ensure the harmonious relationship between all the stakeholders of this earthly world. Central to Islamic teachings are the Islamic laws known as the *Shariah* – literally meaning "a clear path to be followed and observed" – which is derived from the two primary sources namely the Holy *Quran* and the *Sunnah* (the Prophet Muhammad's words and deeds). In addition to the two primary sources, the *Shariah* rulings are also derived from another two independent sources namely the *ijma* (consensus) and the *ijtihad/qiyas* (individual reasoning by analogy) of the *ulama* (Muslim scholars). Such a diverse and subjective source of references allows dynamism in the *Shariah* rulings with ability for further adaptation, development and interpretation to accommodate the ever changing circumstances (see Hourani, 2004).

In essence, Islamic finance is a financial system, in which the fundamental aim is purportedly "to fulfil the teaching of the Holy *Quran* as opposed to reaping maximum returns on financial assets" (Zaher and Hassan, 2001: 158). There are three factors distinguishing Islamic finance from its conventional counterparts as highlighted by Presley and Sessions (1994), Hourani (2004) and Usmani (2005), namely: (1) the strict prohibition of *riba* (interest) in all financial transactions regardless of the percentage of

interest rate applied; (2) the profit and loss sharing (PLS) concept as the justified mean for return distribution; and (3) the ban on *gharrar* (uncertainty or speculation) activities. Consequently, the type of financing preferred by Islamic finance is the one that is backed by tangible asset as compared to debt-based instruments commonly used in conventional financing.

In *Shariah* perspective, Islamic finance is a tool to achieve the *maqasid al-Shariah*, literally means the goals of the *Shariah* or the vision of Islam (Chapra, 2000: 58), or the objectives/purposes behind Islamic *Shariah* rulings (Auda, 2008: 2). Chapra (2000: 118) cited a definition of the *maqasid al-Shariah* as given by a prominent Islamic scholar, al-Ghazali (b.1058 – d.1111), as follows:

> The objective of the *Shariah* is to promote the well-being of *all* mankind, which lies in safeguarding their faith (*din*), their human self (*nafs*), their intellect (*aql*), their posterity (*nasl*), and their wealth (*mal*). Whatever ensures the safeguard of these five serves public interest and is desirable.

Therefore, reducing hardships and making the life of all individuals more comfortable are amongst the important objectives of the *Shariah*. By introducing the moral values, it helps to strike a balance between individual and social interest, thus leading to socio-economic justice and the well-being of all God's creatures (Chapra, 2000: 58). An individual who embraces the moral (or religious) values is likely to behave in the manner envisaged by the Islamic teachings and described by Kuran (2004: 42) as the *homo Islamicus*:

> The final distinguishing element of an Islamic economy, according to Islamic economists, is that its agents act under the guidance of norms drawn from the traditional sources of Islam. These norms 'command good' and 'forbid evil'. They promote the avoidance of waste, extravagance, and ostentation. They discourage activities with harmful externalities. They stimulate generosity. They encourage individuals to work hard, charge fair prices, and pay others their due. The intended effect of the norms is to transform selfish and acquisitive *homo economicus* into a paragon of virtue, *homo Islamicus*. *Homo Islamicus* acquires property freely, but never through speculation, gambling, hoarding, or destructive competition. And although he may bargain for a better price, he always respects his trading partner's right to a fair deal.

One of the fastest growing areas in Islamic finance is the Islamic fund[6] management services. The tremendous growth of the Islamic fund industry is evident from the phenomenal increase in Islamic equity funds from only 29 funds with a total assets worth US$800 million in 1996 to 98 funds with nearly US$5 billion worth of assets in early 2000 (see Ayub, 2007: 203). The need for Islamic fund management services arises following the *Shariah* rulings that allow investment in a company's shares or equity. However, there is an obvious difference in the definition of company share between the *Shariah* laws and the conventional finance theory. Elgari (2002) pointed out that the *Fiqh* Academy of the OIC (Organisation of Islamic Countries) had in 1992 defined a company share as representing an 'undivided portion of company assets' which differs significantly from the conventional finance's definition that a company share represents "residual claim to future cash flows (dividends and liquidation proceeds) of a company". Thus, in the Islamic *Shariah* perspective, the sale of a company share is effectively a "sale of this undivided ownership shares of its assets" (Elgari, 2002: 155). The definition is in line with the view of Islamic finance that all financial instruments should be backed by tangible assets of the issuing company. Ironically though, the definition seems to be applied only for justifying investment in company shares since its actual implications, particularly with regards to accounting treatment and shareholders' rights, is rather unclear. In fact, even for *Shariah*-compliant companies, their ordinary shares are listed on the liabilities and equity side of the balance sheet whilst their shareholders are treated as residual claimants and hence, their claim to the companies' assets is inferior to creditors, bondholders and preference shareholders, despite their holding the supposedly asset-backed shares as assumed by the *Shariah* definition.

The *Shariah* approval for investment in ordinary shares paves the way for the establishment of Islamic funds. Shah (2008: 15) quoted the decision by the Accounting and Auditing Organisation of Islamic Financial Institutions (Accounting Standard 14, Appendix B) which states that:

> Investment funds are permissible by *Shariah* because funds are a form of collective investment that continue throughout their term, the rights and duties of participants are defined and restricted by the common interest since they relate to third parties' rights. Hence, in cases where the fund is managed on the basis of agency the shareholders/unit holders waive their right to management,

[6] For the purpose of this research, an 'Islamic fund' refers to a *Shariah*-compliant unit trust or mutual fund.

> redemption or liquidation except in accordance with the limitations and conditions set out in the statutes and bylaws.

A clearer definition is given by Usmani (2005) when he describes Islamic investment fund as:

> ... a joint pool wherein the investors contribute their surplus money for the purpose of its investment to earn *halal* (permissible) profits in strict conformity with the precepts of Islamic *Shariah*.

Hence, in principle, an Islamic fund is a specialised investment that invests only in *Shariah*-compliant or *halal*-approved securities whilst the operation is undertaken in strict compliance to the *Shariah* principles including the prohibition of interest and the avoidance of investment in any *haram* (forbidden) or *gharrar* (uncertainty or speculative) activities.

With regards to the contract between unit-holders and fund managers, the *Shariah* prescribes that a unit-holder or an investor of Islamic funds as the *rab-ul-amal* (capital provider) in the contract whilst the fund managers may either be the *mudarib* (entrepreneurs) or agents to the unit-holder. In the case of the former, the Islamic fund is managed under the *mudarabah* (profit-sharing) concept in which the fund managers as *mudarib* would be entitled to certain amount of profit at a pre-determined rate as a reward for their contribution in managing the fund. Since the reward is calculated based upon the fund's total return, the fund managers' income would vary depending on the performance of the fund. In the latter however, the fund managers act as agents to unit-holders or investors of Islamic funds and are given a lump-sum payment in the form of management fees as reward for their services. The fee is fixed at an agreed rate by both parties and calculated based upon the net asset value (NAV) of the fund. Therefore, unlike the first type of contract, of which, the Islamic funds' profit is distributed based on the profit-and-loss sharing concept between unit-holders and the fund managers, the management fee is not subject to the performance of the Islamic funds (see Usmani, 2005; Ayub, 2007; Mian, 2008; Shah, 2008). Operationally, with exception of the requirements that Islamic funds must comply with certain *Shariah* guidelines, the funds do not differ significantly from conventional funds. The following section discusses the characteristics of an Islamic fund that distinguish it from its conventional counterpart and highlights the various types of Islamic funds available in the market.

3.3.2 The Characteristics and Types of Islamic Funds

Table 3.1 (page 54) shows the basic features of an Islamic investment and its comparison to conventional and ethical investments. One feature unique to Islamic funds is the strict compliance to the Islamic *Shariah* principles. Hence, as discussed above, Islamic funds would avoid investment in companies involved in *haram* (forbidden) or *gharrar* (uncertainty or speculative) activities including interest-based conventional banking and finance, insurance and gambling as well as production of liquor, tobacco, military armaments, pork-related products, pornography or any other activities deemed harmful or unethical to society or environment. In view of the *Shariah* restrictions, Hussein and Omran (2005: 107) characterised Islamic investment as "low-debt, non-financial, social-ethical investments". Usmani (2005: 203-204) outlined two basic conditions for Islamic funds. Firstly, return from an Islamic fund should be derived from profit actually earned by the fund and must be distributed on a pro-rata basis. Consequently, there shall be no fixed or guaranteed profit from an Islamic fund and, in the case of an Islamic fund incurring losses due to normal trading environment, the subscribers or unit-holders of the fund will have to share the losses as well. Secondly, every aspect of Islamic funds' operation must be carried out according to the *Shariah* principles. This is not limited to investing in *Shariah*-compliant or *halal*-approved securities only, but also includes the investment terms and conditions agreed between all parties involved in the Islamic funds, so too must the handling of the funds also conform to the *Shariah* precepts.

Despite some similarities between Islamic and ethical funds, the two funds are different particularly on two grounds: the screening methods and the purification of income. Hardie and Rabooy (1991), Elgari (2002), Usmani (2005), Ayub (2007), Mian (2008) and Shah (2008) have all discussed both the screening methods and the income purification practices of Islamic funds in great detail. Like ethical funds, the screening process is undertaken as a securities filtering mechanism to ensure that only *Shariah*-compliant securities will be included in the Islamic funds' portfolio. Zaher and Hassan (2001) define the screening process by Islamic funds as:

> ... the practice of including or excluding publicly traded securities from investment portfolios or mutual funds based on the religious and ethical precepts of the Islamic *Shariah*.

The primary responsibility of the screening process rests on the *Shariah* advisory board of Islamic funds. The board, whose members comprises of Islamic *Shariah* scholars, is responsible for advising the fund managers on all matters relating to *Shariah*-compliancy including the formulation of *Shariah* guidelines, deciding on a company admissibility status into the portfolio, and conducting review and monitoring of Islamic funds' portfolio in response to the ever changing business operations or activities of all companies in the portfolio.

In general, there are two screening methods used by the *Shariah* advisory board to determine for company admissibility status; namely business activity screening and financial ratio screening. The business activity screening is undertaken to determine that the company under consideration is not involved in any activities prohibited by the *Shariah*. However, since it is almost impossible to find a company which is purely *Shariah*-compliant, Islamic scholars have agreed to approve any company where 95 per cent of its earnings are derived from *halal* activities. Therefore, the remaining 5 per cent of the company's earnings may come from non-*halal* sources deemed unavoidable due to current business practices. One popular example of non-*halal* earnings is interest-based income from conventional banking and financing activities. On the other hand, financial ratio screening is carried out to ensure that the financial aspect of the company under consideration complies with the *Shariah* requirements pertaining to leverage, receivables and interest income. For a company to be approved as *halal*, its total debt obtained from conventional financing must not exceed 33 per cent of the company's equity, its account receivables should be less than 49 per cent of the total assets whilst interest income derived from cash and other interest bearing instruments should not accounts for more that 5 per cent of the total profit.

The second aspect distinguishing Islamic funds from ethical funds is the income purification. Since it is practically impossible to find a company which is 100 per cent *Shariah*-compliant, Islamic scholars have agreed to allow investment in a company that meets the minimum requirement outlined by both the business activity and the financial ratio screening. Hence, it is the mixture of income between *halal* and non-*halal* sources that gives the rational for income purification. Elgari (2002) defines purification as "deducting from the returns on one's investment those earnings, the source of which is not acceptable from a *Shariah* point of view" and provides an excellent discussion on the

process of purification. Zaher and Hassan (2001) as well as Mian (2008) state that purification basically 'cleanses' Islamic portfolio of income derived from investments in prohibited businesses or from interest-based (*riba*) transactions. In brief, the purification process involves a deduction of a certain amount of profit or dividend payment that supposedly represents the non-*halal* income portion for charity purposes. It can be accomplished either by the Islamic fund managers making the deduction prior to distributing the profit or by Islamic fund investors themselves upon receiving the advice from the fund managers on the amount that needs to be deducted from their dividend.

While ethical funds are created based on certain ethical values, Islamic funds are created based on religious principles, and hence, are poised to have rather stricter conditions. For instance, the adoption of *Shariah* principles is not only restricted to the securities selection process but all aspects of Islamic funds' operations must also comply with the *Shariah* precepts starting from the establishment of the funds right until when the profit (or loss) is distributed (or shared) between investors and Islamic fund managers. Such distinct features of Islamic funds are enough to make the funds attractive especially for pious investors who seek to practice their religious beliefs when making an investment. It is also in line with Shah's (2008: 15) assertion that the main purpose of the creation of Islamic funds is "to attract investors whose investment decision is based on the guidance provided by the Islamic *Shariah*". The similarities between religious and ethical objectives make Islamic funds equally attractive to ethically-oriented investors. Maurer (2001) suggested that the phenomenal growth of Islamic funds is attributed to the emerging interest towards ethical investments that "do not invest in unethical practices and industries". His comment, which is specifically made in reference to the *Shariah* prohibition against derivatives trading including futures and options contracts that was largely blamed for economic crises and business scandals, is shared by Hussein and Omran (2005) who argued that the Islamic investment approach possesses a unique advantage in its ability to detect and remove troubled companies as shown by the withdrawals of WorldCom, Enron and Tyco from the list of Dow Jones Islamic Market Index and the subsequent selling of these companies' shares by Islamic fund managers long before the companies were collapsed due to various scandals related to unethical corporate practices. This special ability enables Islamic funds to better safeguard their investors' interest and makes the funds more attractive to investors.

Although the Islamic fund industry is still in its infancy relative to the more established conventional fund industry, Islamic funds have managed to gain a considerable market share in the overall fund management industry due to the availability of various Islamic fund products to cater for the diverse needs of the general investing public. Usmani (2005) describes six types of Islamic funds, namely equity funds, *ijarah* (leasing) funds, commodity funds, *murabahah* (cost-plus) funds, *bai-al-dain* (sale-of-debt) funds, and mixed funds. The nature and operations of each type of Islamic funds are basically similar to their conventional counterparts except that the Islamic funds are required to adhere strictly to the relevant *Shariah* guidelines. The *bai-al-dain* funds however, are only traded in Malaysia since the sale of debt instruments is ruled permissible by Muslim scholars in the country alone whilst majority of Muslim scholars in other Islamic countries have ruled otherwise. Like other investors, subscribers of Islamic funds are also hoping for a positive return from their investment. Hence, the performance of Islamic funds is a subject of interest not only to investors but also to industry practitioners and academics alike. Some of the previous studies on Islamic fund performance are discussed in the following section.

3.3.3 Islamic Funds' Performance and Valuation Methods

Despite the overwhelming demand for Islamic funds, Kurtz (2005) admitted that past literatures on Islamic funds' performance especially in mainstream academic journals however, are scarce. Several studies have reported that Islamic funds could outperform conventional funds or the key market index. A casual observation by Zaher and Hassan (2001) on the performance of 37 Islamic mutual funds during the 1997 to 1999 period shows that Islamic funds do generate positive return to investors. Hussein and Omran (2005) as well as Al-Zoubi and Maghyereh (2007) analysed the performance of the Dow Jones Islamic Market Index (DJIMI) vis-à-vis the performance of conventional benchmarks such as the Dow Jones World Index and found that the Islamic index has outperformed its conventional counterpart during the 1995 to 2005 period. Using both the parametric and non-parametric tests as well as the three traditional portfolio valuation models, Hussein and Omran (2005) argued that the Islamic index achieved positive abnormal return especially during a bullish market period but performed poorly during a bearish market period. They attributed the phenomenon to the relatively low gearing

level of *Shariah*-compliant stocks that make up the Islamic index component as well as the *small firm effect* since smaller capitalised stocks are known to perform better during a bullish market period. It is worth mentioning here that this line of argument has some similarity with the reason given to account for ethical funds' superior performance. They further argued that the poor performance of the Islamic index during the bearish market period is caused by the better performance of non-*halal* stocks such as alcoholic beverage firms that help the conventional index to sustain its performance. Similar analysis by Al-Zoubi and Maghyereh (2007) using the Value-at-Risk (VaR) method found that the Islamic index has lower risk exposure as compared to the conventional index and they attributed this to the profit and loss sharing (PLS) concept practiced by *Shariah*-compliant stocks that help to reduce investment risk and makes these stocks more attractive to investors.

Studies undertaken in Malaysia by Yaacob and Yakob (2002), Shah Zaidi *et al*. (2004) and Abdullah *et al*. (2007) revealed that Islamic funds in the country are able to achieve superior performance. Yaacob and Yakob (2002) based their analysis on a hypothetical portfolio comprising of five *Shariah*-approved stocks whilst Shah Zaidi *et al*. (2004) and Abdullah *et al*. (2007) based their analysis on a sample of Islamic unit trust funds available in the market. Performance is measured primarily by the three standard portfolio valuation models. In contrast, studies by Abdullah *et al.* (2002; cited in Nik Muhammad and Mokhtar, 2008) and Nik Muhammad and Mokhtar (2008) found that Islamic funds underperformed conventional funds. In addition, Shah Zaidi *et al*. (2004) and Abdullah *et al*. (2007) also found that the Islamic funds in their sample were not well diversified, thus indicating a lack of stock selection skills among the Islamic fund managers to identify underpriced securities.

Contrary to the above findings however, Mueller (1994) claimed that the Islamic fund, represented by the US-based Amana Income Fund as his only sample, generates lower return as compared to the other conventional funds. He used this finding to support the *cost-of-discipleship* hypothesis which states that ethically-oriented investment suffers additional costs that compromise investment return. Wilson (1997) stated that the performance of both ethical and Islamic funds is not significantly different from the performance of conventional funds. His argument is based on the return from certain

ethical funds in the UK and the performance of key stock market indices of several Muslim countries used in his sample.

Further review on the literatures however, indicates that the past results should be interpreted cautiously in view of the scarcity and constraints in the research methodology which may influence the outcome of the studies. In particular, the findings derived simply from casual observations might be less convincing since it merely considers nominal return and fails to take into account the risk element as well as the other statistical considerations that could affect the accuracy of the return measurement. In addition, the robustness of past results is hampered by the limitations inherent in the sample used including the crucial choice between Islamic funds or the Islamic stock market index as the proxy for Islamic-oriented investment, the time period covered and the prevailing market condition during which the past studies were undertaken, and other weaknesses associated with the limitations of the conventional mean-variance portfolio valuation models when they are employed to measure the performance of unit trust or mutual funds whose stated objectives include the attainment of other non-pecuniary motives beyond the return-risk framework. Since Islamic fund is basically a subset of the universe of ethical investment, the use of the traditional portfolio valuation models to measure Islamic fund performance would have similar implications with the use of the traditional portfolio valuation models in the assessment of ethical funds as has been discussed in the previous section pertaining to the issues in the valuation of ethical funds' performance. The following section examines the issue further by discussing two other crucial issues related to Islamic funds.

3.3.4 Issues in Islamic Fund Investment

Apart from the portfolio valuation issue, two other issues significant to Islamic investment are the existence of various *Shariah*-screening guidelines and the real motive behind fund management companies' offering of Islamic funds. For the first issue, the *Shariah*-screening criteria is certainly a crucial issue particularly during the securities selection process as the guidelines are used to determine the admissibility status of assets or securities into Islamic funds' portfolios. Despite its crucial role, the *Shariah*-screening guidelines themselves are a matter of interpretative issue. Hence, with exception of those

unambiguous non-*Shariah*-compliant companies, by virtue of their involvement in forbidden (*haram*) or *gharrar* (uncertainty) activities, there is no worldwide consensus with regards to the *Shariah*-screening criteria used for companies with a rather vague status arising from the mixture of their earnings or business activities between *halal* and non-*halal* sources, or for newly developed financial instruments especially those with asset-leverage hybrid characteristics. Instead, the permissibility status of such securities or financial instruments is largely determined upon a particular *Shariah* scholar's school of thoughts who become a member of the *Shariah* advisory board. Consequently, there are obvious discrepancies in the *Shariah*-screening guidelines as well as the final list of permissible securities produced by differing *Shariah* advisory boards. Mian (2008) highlighted six different *Shariah*-screening criteria used by various Islamic equity indices namely the Bursa Malaysia *Shariah* Index, the FTSE Global Islamic Indexes, the Dow Jones Islamic Market Indexes, the S&P *Shariah* Indexes, the Global GCC Islamic Index, and the MSCI Islamic Index Series. Most of the discrepancies in the decision over company or securities' *halal* status are due to the way liabilities-based instruments are treated by the differing *Shariah* advisory boards.

Table 3.2 highlights the *Shariah* screening guidelines used by the Securities Commission of Malaysia (SC), the Dow Jones Islamic Market Index, the FTSE and Yasaar Research Inc. and the MSCI Global Islamic Indices. It appears that, while the four screening methods are virtually unanimous on the types of business activities deemed non-permissible (*haram*) with regards to business activities screening, they are slightly different in their judgement when it comes to the financial ratio screening or in treating companies which are involved in both permissible and non-permissible activities. For instance, in respect to interest income obtained from conventional banking, the SC would approve a company as a *Shariah*-complaint if the total interest amount is less than 10 percent, but the FTSE and Yasaar Research Inc. and the MSCI Global Islamic Indices applied a less than 5 percent benchmark. Similarly, there is a difference in the treatment of accounts receivables whereby the cap varies between 33.33 percent (MSCI Global Islamic Indices), 45 percent (Dow Jones Islamic Market Index) and 50 percent (FTSE and Yasaar Research Inc.).

Table 3.2: Comparison between *Shariah* Screening Methods

No	Screening Criteria	Screening Method			
		Securities Commission of Malaysia (the SC)	**Dow Jones Islamic Market Index**	**FTSE and Yasaar Research Inc.**	**MSCI Global Islamic Indices**
1	Business activities screening.	Exclude companies involved in: ▪ Financial services based on *riba* (interest); ▪ Gambling and gaming; ▪ Manufacture or sale of non-*halal* products or related products; ▪ Conventional insurance; ▪ Entertainment activities that are non-permissible according to *Shariah*; ▪ Manufacture or sale of tobacco-based products or related products; ▪ Stockbroking or share trading in *Shariah* non-compliant securities; ▪ Other activities deemed non-permissible to *Shariah*.	Excludes companies involved in: ▪ Alcohol; ▪ Tobacco; ▪ Pork-related products; ▪ Conventional financial services (banking, insurance etc.); ▪ Weapon and defence; ▪ Entertainment (hotels, casinos/gambling, cinema, pornography, music etc.).	Excludes companies involved in: ▪ Interest bearing investments; ▪ Forward currency transactions; ▪ Manufacture or distribution of alcohol or tobacco products; ▪ Gaming or gambling; ▪ Manufacture or distribution of weapons and defence-related products; ▪ Pork-related products; ▪ Conventional banking, insurance and other interest-based financial services; ▪ Pornographic materials; ▪ Any other activity not permitted by the *Shariah* as determined by Yasaar's *Shariah* Board.	Excludes companies that are directly involved in, or derive 5% or more of their revenue from: ▪ Alcohol; ▪ Tobacco; ▪ Pork-related products; ▪ Financial services; ▪ Defence/Weapons; ▪ Gambling/Casino; ▪ Music; ▪ Hotels; ▪ Cinema; ▪ Adult entertainment.
2	Benchmarks for a mix between both permissible and non-permissible activities, or based on the financial ratios screening.	Exclude companies that have more than: ▪ 5% contributions from clearly prohibited actvities; ▪ 10% contributions from elements affecting most people and difficult to avoid e.g. interest income from conventional banks; ▪ 20% contributions from rental payment from *Shariah* non-compliant activities; ▪ 25% contributions from generally acceptable activities but with elements that may affect the *Shariah* status of the activities.	Exclude companies that have more than: ▪ 33% of Total Debt divided by Trailing 12-month Average Market Capitalisation; ▪ 33% of Total Cash and Interest Bearing Securities divided by Trailing 12-month Average Market Capitalisation; ▪ 45% of Accounts Receivables divided by Total Assets.	Exclude companies that have more than: ▪ 33% debt to total asset ratio; ▪ 33% cash and interest bearing accounts (liquid instruments like CDs); ▪ 50% receivables and cash; ▪ 5% total interest and non-compliant activities income.	Exclude companies that have more than: ▪ 33.33% total debt over total assets; ▪ 33.33% sum of cash and interest-bearing securities over total assets; ▪ 33.33% sum of accounts receivables and cash over total assets.

Source: 1. Securities Commission of Malaysia (SC) at www.sc.gov.my; 2. Dow Jones Indexes at www.djindexes.com; 3) Yasaar Ltd.; 4) www.mscibarra.com

The second issue pertaining to the real motive of fund management companies offering Islamic funds originates from Shah's (2008: 15) contention that the main purpose of the creation of Islamic funds is "to attract investors whose investment decision is based on the guidance provided by the Islamic *Shariah*". In light of the findings that fund management companies were driven by profit motive, rather than socially-oriented motive, when offering ethical funds, it is possible that the same pecuniary motive may also entice fund management companies to offer Islamic funds. The mixture of investment products between Islamic and conventional funds, and the manner in which fund management companies handle their Islamic funds indicate that fund management companies use their Islamic funds mainly as a tool of their marketing strategy by diversifying their product lines with the purpose of outwitting their rivals and ensuring their own survival in the highly competitive fund management industry. In this case, Islamic funds are perceived as just another product of the fund management companies to cater for the various needs of the general investing public whilst the offer of Islamic funds is merely to capitalise on the market opportunity created by the pious Muslim investors, in particular. Therefore, it is the profit objective, rather than genuine religious causes, that becomes the real reason behind the offer of Islamic funds by fund management companies. Despite the doubt surrounding the sincerity of fund management companies to promote religious causes, by offering Islamic funds the fund management companies have nevertheless contributed significantly to the development and expansion of the Islamic fund industry. In addition, this study is neither designed to investigate the real motive of fund management companies nor it is intended to examine the actual reason for investors to subscribe to Islamic funds.

3.3.5 Questioning the Limited Development in the Islamic Funds' Performance Valuation

It is rather unfortunate that the tremendous growth of the Islamic fund industry worldwide is not supported by similar enthusiasm to further develop the industry judging from the scarcity of academic research in this field. For instance, due to the absence of alternative fund performance valuation models, past studies have no other choice but to use the traditional portfolio valuation models in their analysis of Islamic funds performance. This situation does not augur well for long-term development of the Islamic finance and

banking industry as it could impede the progress of the relatively newly developed industry which is fast emerging as a viable alternative to conventional finance and banking.

There are two possible reasons for the lack of research on Islamic funds' performance valuation. First, as argued by Lydenberg (2007), the modern portfolio theory is so dominant and too influential in finance and investment research to the extent that any proposed alternative models, especially those departing away from the mean-variance framework that have become the pillars of the modern portfolio theory, will be viewed sceptically by the mainstream finance community. The difficulty in measuring or rewarding non-financial motives further aggravates the lack of interest towards developing an alternative portfolio valuation model exclusive for Islamic funds. The second reason is the limited intellectual capacity particularly among Muslim academic scholars as well as Islamic finance and banking (IBF) practitioners. Since developing such an alternative fund performance valuation model is in itself a daunting task that requires vast amount of effort, time and intellectual capability, there are few ambitious researchers who are committed to develop the alternative valuation model – particularly considering the huge challenges that await the alternative model from the mainstream finance community and the acceptance level especially from IBF practitioners. Instead, the majority of Muslim scholars and IBF practitioners are merely interested in the creation of Islamic finance and banking products which, in most cases, is achieved by mimicking conventional products. Overreliance on Western scholars is perhaps another reason for the lack of confidence or innovations by Muslim scholars and IBF practitioners. This is evident from Maurer (2001) when he recounts a confession by a London-based IBF practitioner at a conference held in Southern California in the spring of 2000 that Middle Eastern states wanted to see "models developed in the West, before they would import them back to the Muslim countries". Therefore, it is not surprising to see the development of Islamic finance and banking industry is actually trailing the development of its conventional counterparts with a notable lack of originality, particularly in terms of genuine Islamic finance and banking products or their valuation methods.

3.3.6 Conclusion

Islamic fund is essentially a subset of the ethical investment universe with the *Shariah*-compliance as its unique characteristic distinguishing the fund from an ethical or conventional fund. Despite the Islamic fund industry having attracted considerable interest from the general investors – judging from its tremendous growth over the past three decades – there are various outstanding issues especially related to the differences in the *Shariah*-screening criteria and the proper valuation of the performance of Islamic funds that have yet to be resolved satisfactorily. The limited studies on Islamic funds suggest that the existing findings need to be interpreted cautiously.

3.4 CONCLUDING REMARKS

Contrary to conventional funds in which the primary objective is to maximise monetary return, ethical and Islamic funds were principally created to achieve non-pecuniary objectives although monetary return is undoubtedly important to these funds to ensure that they remain viable to investors. The ethical and religious motives are translated into the screening criteria which distinguish the ethical and Islamic funds from their conventional counterparts. The nobility of their underlying objectives aside, ethical and Islamic funds however, suffered certain disadvantages in their quest for righteous causes in the form of a reduced investment asset universe and higher operating costs as compared to conventional funds. Despite this however, demand for ethical and Islamic funds is poised to grow amid the increase in public altruisms, higher concern towards corporate social responsibility and rising religious influence. At present, the measurement of ethical and Islamic funds' performance is undertaken by using the traditional portfolio valuation models, due largely to the unavailability of an alternative model. However, since the standard models fail to give due consideration to the constraints faced by ethical and Islamic funds, the models are likely to be biased against ethical and Islamic funds hence, their results should be interpreted with caution. Consequently, more serious and thorough analyses are required particularly on Islamic funds since research in this area is deemed as still in its infancy judging from the scarcity and limited scope of the previous studies. The need is even more pressing in view of the continuing strong growth of the Islamic fund industry worldwide that stimulate the need

for more credible analysis on the real investment potential of Islamic funds. Malaysia, for instance, is one of the many countries that have enjoyed considerable success both in its conventional and Islamic capital markets as well as its Islamic fund industry. The following chapter provides a review on the growth of the Malaysian stock market and the development of the Islamic investment in Malaysia.

Chapter 4

THE DEVELOPMENT AND PERFORMANCE OF THE MALAYSIAN STOCK MARKET AND ISLAMIC-BASED INVESTMENT IN MALAYSIA

4.1 INTRODUCTION

Although Malaysia may be regarded as a relatively young nation, having celebrated its 50th year of independence only in 2007, the country can certainly be proud of itself for having one of the biggest and most dynamic stock markets, particularly among developing countries. Even more so, Malaysia has established itself as one of the pioneers of Islamic-based investment and has, over the years, equipped itself to becoming a hub for the global Islamic banking and finance industry.

This chapter provides an overview of the Malaysian stock market and unit trust or mutual fund industry as well as Islamic-based investment in the country. The chapter starts with the history and progress of the Malaysian stock market from its earlier set-up that resembles more of an exclusive investment club to become one of the biggest stock market in the Southeast Asia today both in terms of the size of its market capitalisation and the total number of listed securities. This is followed by the topic on the phenomenal growth of the unit trust or mutual fund industry in Malaysia which subsequently helped to stimulate the development of Islamic-based investment in the country significantly. The chapter continues with the review of empirical studies pertaining to the performance of both the conventional as well as Islamic unit trust funds in Malaysia, and finally ends with a conclusion.

4.2 OVERVIEW OF THE MALAYSIAN STOCK MARKET

This section provides an overview of the Malaysian stock market, paying particular attention to the history and the rapid growth of stock market investment in Malaysia. The section offers an insight into how the capital market, particularly equity investment, has evolved in the country, central to the development of the Malaysian fund management and unit trust industry.

4.2.1 History, Development and Trends of the Malaysian Stock Market

The history of the Malaysian stock market can be traced back from 1930 when the Singapore Stockbrokers' Association was established. In 1937, it was re-registered as the Malayan Stockbrokers' Association. Prior to 1960 however, securities trading activities were exclusively confined amongst the members of the stockbrokers. The general public was able to trade in the stock market from 1960 following the establishment of the Malayan Stock Exchange in Kuala Lumpur. Following Singapore's joining the Federation of Malaysia in 1963, the Malayan Stock Exchange was renamed the Stock Exchange of Malaysia in 1964, later being renamed the Stock Exchange of Malaysia and Singapore in 1965 due to the withdrawal of Singapore from the Federation of Malaysia during that year. In 1973, the Stock Exchange of Malaysia and Singapore was split into the Kuala Lumpur Stock Exchange Berhad and the Stock Exchange of Singapore following the decision by both countries to terminate the interchangeability of their currencies. The Kuala Lumpur Stock Exchange Berhad was transformed into a business entity when it was incorporated as a company limited by guarantee on the 14th of December 1976 and became known as the Kuala Lumpur Stock Exchange (KLSE).

In yet another important milestone in the history of the KLSE, the Exchange underwent a consolidation exercise in 2002 involving the merger of its three equity-based listing boards (the Main Board, the Second Board and the MESDAQ) with derivatives and offshore markets, thus producing a single trade exchange for Malaysia in line with the objective of the Malaysian Capital Market Masterplan (CMP). Subsequently, the KLSE undertook a demutualization exercise and changed its name into Bursa Malaysia Berhad (hereinafter known as Bursa Malaysia) on the 14th of April 2004. The company was later listed on the Main Board of Bursa Malaysia Securities Berhad on the 18th of March 2005. Compared to its humble beginning with sole focus in equity-based securities trading, today Bursa Malaysia has expanded its operations to include trading in futures- and other derivatives-related financial products including stock market index options, palm oil futures, interest rates futures and government bonds as well as offshore market operations. However, since the subject interest of this study is on the equity-based securities trading, in particular, the rest of the discussion will therefore focus on the growth of the Malaysian stock market undertaken by Bursa Malaysia Securities Berhad, a subsidiary of Bursa Malaysia.

Over the past four decades, the Malaysian stock market has experienced tremendous growth and contributed significantly to the expansion of the Malaysian economy and businesses. From just one listing board with a total of 262 companies in 1973, there are currently three listing boards managed by Bursa Malaysia Securities Berhad with a total of 982 companies comprising of Main Board (637 listed companies), Second Board (221) and MESDAQ Market (124)[7]. The growing number of new companies listed through the initial public offerings (IPOs) reflects the increasing popularity of the Malaysian capital market as an important avenue to raise additional funds. On average, there are a total of four new companies listed annually for the period from 1973 to 1979 and this number increases to seven new companies listed annually during the 1980s. These however, are substantially lower as compared to the average of 50 new listings per year during the 1990s and 45 new companies for period from 2000 to July 2008. Consistent with the bullish market performance in the 1996-1997 periods, the number of new listings peaked at 92 companies in 1996 and 88 companies in 1997.

The significant increase in the number of IPOs provides evidence of the growing popularity of the capital market as a venue to raise funds for both public and private sectors. The total net funds raised in the capital market in 2007 stood at 45.48 billion *Malaysian Ringgit* (RM) (GB£1 = RM4.90, approximately) representing a 35 per cent increase from RM33.74 billion in 1997, and nearly four times the capital raised in 1987 of RM9.47 billion. A closer look into the trend of total funds raised for period from 1975 to 2009 reveals another interesting phenomenon with regards to the breakdown between the funds raised by the public sector against the private sector. The public sector raised more funds as compared to the private sector during 1975 to 1988 averaging at RM4.37 billion per year (mainly through the Malaysian Government Securities issues) against RM820 million per year raised by the private sector. The huge funds raised by the public sector reflects the over reliance on the government's expenditures during this period which are needed primarily for social and infrastructural developments as well as to stimulate economic expansion. The trend however, reversed during 1989 to 2004 when the bulk of the newly raised funds went to the private sector, averaging at RM27.5 billion per annum against RM14.6 billion per annum raised by the public sector, thus signifying the increasing role of the private sector as the new engine of growth for the Malaysian

[7] As of the 8th of August 2008.

economy. It was during this period that the stock market gained its reputation as a popular source of funding since the majority of the funds raised by the private sector were either through the issuance of new ordinary shares or private debt securities including corporate bonds. To put this into perspective, the share of the total funds raised by the private sector in 1995, 1996 and 1997 accounted for 89.7 per cent, 84.6 per cent and 91.0 per cent of the entire funds raised during the three years, respectively. However, the dismal stock market performance particularly over the last three years has seen a significant decrease in the amount of new funds raised through the stock market, bottoming out at a mere RM1.92 billion in 2006, although corporate bonds remain an attractive source of funding. The summary of the amount of net funds raised in the Malaysian capital market for a 5-year interval from 1975 up to 2009 is shown in Table 4.1.

Table 4.1: Summary of Total Net Funds Raised in the Malaysian Capital Market (in RM mil)

Sector	1975	1980	1985	1990	1995	2000	2005	2009
Public Sector	909	2,311	3,591	3,816	(35)	13,659	15,825	57,766
- New MGS	1,086	3,266	4,980	5,441	2,750	19,964	34,688	96,794
Private Sector	76	157	645	10,779	19,955	25,949	25,894	52,581
- New Shares	28	137	645	8,650	11,616	6,013	6,315	26,045
- New Debts	48	20	0	2,129	8,339	19,936	19,579	26,536
Net Funds Raised	985	2,468	4,236	14,595	19,920	39,608	41,719	110,347

Source: Modified from various issues of Bank Negara Malaysia's Monthly Statistical Bulletin

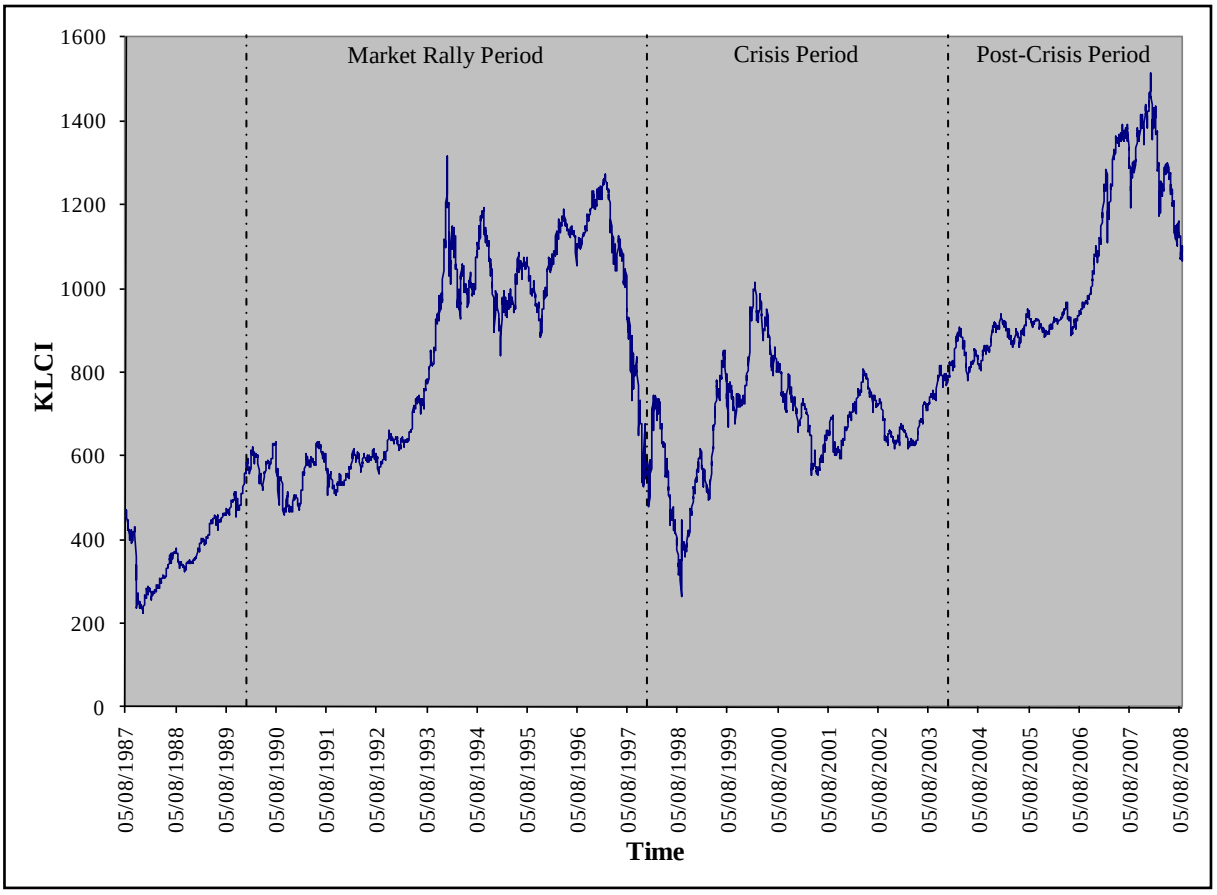
All of the 982 companies listed on the three listing boards of Bursa Malaysia Securities Berhad are grouped into several industry classifications according to their principal business activities such as Consumer Products, Industrial Products, Construction, Hotels, Trading/Services, Technology, Finance, Property, Plantation, and Mining. At present, the stock market performance is measured by 23 indices including ten Bursa Malaysia Index Series, which tracked the overall performance of individual sectors in Bursa Malaysia Securities Berhad; and, 13 FTSE Bursa Malaysia Index Series, which comprises of six tradable indices and seven benchmark indices. The current key benchmark index is the FTSE Bursa Malaysia KLCI Index (FBMKLCI) which replaced the previous Kuala Lumpur Composite Index (KLCI) on the 6th of July 2009. The key benchmark index is calculated based upon the weighted average market capitalisation of their component stocks with the year 1977 serving as the base year for the index

calculation. Unlike the KLCI which consists of 100 selected blue-chip stocks, the FBMKLCI has 30 selected blue-chips as its component stocks. Since the FBMKLCI is a relatively new index and has only recently replaced the KLCI, this study is therefore focused upon the performance of the KLCI.

4.2.2 Review of the KLCI Performance: August 1987 to September 2008

The long run performance of the KLCI shows that the key benchmark index is generally moving in an upward trend direction which reflects the future potential of stock market investment in Malaysia. Notwithstanding however, the performance of the stock market is continuously influenced by various economic and political factors both domestically and internationally. Therefore, as indicated by the KLCI daily price movement as shown in Figure 4.1, the short- and medium-term performance is likely to be characterised by market volatility and fluctuation of the key index although the long-term prospect is envisaged to remain favourable.

Figure 4.1: KLCI Daily Performance 08/1987 to 09/2008



Source: KLCI data obtained from Innosabah Securities Berhad and Yahoo Finance website.

Figure 4.1 reveals that prior to 1993 the KLCI has been moving steadily in an upward trend direction amid less volatility. The trend however, changed drastically in 1993 when the benchmark index, supported by substantially heavy trading volume, rose dramatically from 643.96 on the 31st of December 1992 to its record high level of 1,314.46 on the 5th of January 1994, thus giving an impressive 100 per cent increase in the index value in just slightly more than a one-year period. The rally was mainly driven by the growing interest towards stock market investment among retail and institutional investors as well as the growing popularity of the stock market as an attractive avenue for fund raising activities to corporate entities mainly via IPO exercises. The strong interest is indicated by the sharp increase in the daily trading volume from the average of 46 million shares prior to 1993 to 249 million units during 1993 to 1997 periods. In value terms, the average daily market capitalisation generated by the Malaysian stock market rose markedly from RM161.39 billion in 1992 to RM619.64 billion in 1993, representing a tremendous 284 per cent increase in just a one-year period. The market capitalisation continued to rise with the highest value recorded for 1996 and 1997 at RM810.13 billion (November 1996) and RM888.66 billion (February 1997), respectively. Numerous positive fundamental factors contributed to the strong stock market performance including the currency and political stability, strong economic growth, favourable monetary and fiscal policies as well as the large inflows of foreign capital particularly from international fund managers into the Malaysian stock market, a phenomenon which was also visible in other east Asian stock markets such as Singapore, Indonesia, Thailand, Hong Kong, Taiwan and South Korea.

The 1993 stock market rally however, was short lived; almost immediately heavy profit taking activities as investors took the opportunity to realise their gains caused the KLCI to fall sharply lower from its record level high. Subsequently, the KLCI underwent a lengthy period of consolidation from 1994 to 1997 but was able to maintain its performance by hovering around the 1000-point psychological level as investors' interest towards the stock market remain favourable as indicated by the relatively high daily trading volume. The market staged another short rally when the index rebounded 377.20 points (42.20 per cent gains) from the low of 893.80 on the 20th of November 1995 to the high of 1,271.00 on the 25th of February 1997. However, the KLCI took a major beating when the Asian financial crisis struck beginning from July 1997 which saw the benchmark index retreat to its lowest level of 262.70 on the 1st of September 1998 for a

whopping 80.0 per cent loss from its highest level of 1,314.46. The share prices also dropped significantly when the market capitalisation shrank by 50 per cent from RM744.47 billion in June 1997 to RM375.80 billion in December 1997. Various economic recovery measures imposed by the Malaysian Government to alleviate the impact of the Asian financial crisis – particularly the selective currency exchange control, the curb on 'hot money' by imposing a one-year moratorium on foreign funds invested in Malaysian shares, and the cessation of the over-the-counter trading of Malaysian equities in Stock Exchange of Singapore's CLOB (Central Limit Order Book) – have enabled the KLCI to stem the slide and stage a strong rebound from the lowest level back to around the pre-rally level[8]. Unfortunately, the KLCI suffered yet another intense selling pressure led particularly by the heavy selling of technology-related stocks following the worldwide failure of dot.com companies. Consistent with the poor performance of the KLCI, interest towards the stock market also faded considerably as shown by the shrink in the average daily trading volume to 136 million units, almost half of the daily average volume recorded prior to the crisis, and the significant drop in the number of new companies that opted for listing from 68 companies before the crisis to just 27 companies during the crisis. Notwithstanding however, the value of shares traded during the crisis period has increased steadily from RM374.52 billion in 1998 to RM552.69 billion in 1999 and RM444.35 billion in 2000, reflecting a strong performance of the Malaysian listed companies as well as the stock market, thus indicating a fairly limited downside risk despite the heavy selling pressure.

The post-crisis period has seen a rather steady increase in the value of the KLCI albeit at a lower trading volume averaging at 105 million shares per day which signifies investors' cautiousness towards stock market investment. This period has also witnessed various regulatory changes and corporate undertakings being implemented to further strengthen the Malaysian stock market with the most notable changes being the demutualization exercise of the KLSE into Bursa Malaysia Berhad and the expansion of its business activities into futures and other derivatives-related trading as well as offshore market operation. Combination factors of the continuing strong macro economic performance, political stability, favourable monetary and economic policies, and numerous measures implemented to revive the Malaysian capital market and property

[8] Today, almost all of the economic recovery measures introduced to offset the impact of the 1997 Asian financial crisis have been lifted.

sector reignited interest towards the stock market particularly in 2007 as shown by the sharp increase in the daily average trading volume to 224 million shares during the year. Investors' interest was also encouraged by the impending merger of the three biggest Malaysian plantation companies as well as the purportedly politically-linked trading in the run up to the Malaysian 12th general election that was widely anticipated to be called in the early 2008. The renewed interest pushed the KLCI to its record all time high of 1,516.22 on the 11th of January 2008 on the back of heavy trading volume of 543 million units. In terms of market capitalisation, the value of Malaysian shares has more than doubled during the period from the daily average of RM464.98 billion to RM1,106.15 billion in 2007. Marred by the less favourable political climates and the rising fuel and food prices which threatened the overall economic outlook, the KLCI performance during the second and the third quarter of 2008 however, was rather miserable and unfortunately as of the 3rd of September 2008, the KLCI has already lost 430.84 points or 28.4 per cent from its record all-time high level.

For the purpose of this study, the past performance of the KLCI has been divided into four periods as outlined in Table 4.2. Apart from the 'All Period' which covers the entire data available for this study, the individual period is determined by observing the major turning point in the benchmark's movement. The turning point can be identified from a sharp increase (decrease) in the index level which usually marks the beginning (end) of a stock market rally (decline), and this is subsequently followed by a period of consolidation as the index is adjusting itself to find a new support level that reflects its true fundamental value.

4.2.3 Conclusion

The Malaysian stock market has experienced remarkable growth over the past four decades both in terms of its operations and trading performance. The market has evolved from a state of lacklustre trading in the 1970s and 1980s to become one of the most attractive investment avenues for all types of investors and a major source of fund raising for corporate entities particularly in the 1990s. Notwithstanding however, trading in the Malaysian stock market has been pretty volatile as reflected by huge fluctuations as the market is continuously influenced by various domestic and international factors that

either stimulate buying interest or trigger profit taking or selling activities. Nevertheless, both Bursa Malaysia Berhad and the Malaysian Government through its agencies, particularly the Securities Commission of Malaysia (the SC) (a self-funding statutory body established on the 1st of March 1993 under the Securities Commission Act, 1993 with the primary function to regulate and supervise all matters relating to the operations of the Malaysian capital market), are committed to creating favourable and efficient trading environment, encourage better investment practices and enhance investors protection. Despite its volatile performance, the Malaysian stock market has undoubtedly contributed tremendously to the growth and expansion of the Malaysian economy. One type of investment that has benefited largely from the success of the stock market is the Malaysian unit trust or mutual fund industry. The following section looks into the issue in greater detail.

Table 4.2: The Classification of Period Under Study

No	Classification	Years Covered	Remarks
1	All Period	1990 to 2008	Gives the long term trend of the historical performance of the KLCI for the entire duration covered by the data obtained for this study.
2	Market Rally Period	1990 to 1997	This period is particularly characterised by a bullish market trend in 1992 to 1994 and 1996 to 1997 periods.
3	Crisis Period	1998 to 2003	Shows the KLCI volatility during the bearish market period as the Malaysian stock market went through two major crisis namely the Asian financial crisis in 1997-1998 and the collapse of dot.com (technology) companies in 2000. This period is particularly characterised by the steep market decline at the opening period followed by a sharp rebound which was rather short lived as the market succumbed to yet another round of heavy selling pressure at the end of the period.
4	Post-Crisis Period	2004 to 2008	This period is characterised by the steady KLCI recovery stimulated by favourable Government initiatives particularly those targeted at capital markets and property sector, various corporate exercises especially the merger of three most prominent plantation groups in the country as well as the run up to the Malaysian 12th general election anticipated in early 2008.

4.3 OVERVIEW OF THE MALAYSIAN UNIT TRUST INDUSTRY

This section provides an overview of the Malaysian unit trust fund industry including the growth of unit trust investment in Malaysia. The understanding of this topic will give a better idea of how unit trust investment has evolved and flourished in Malaysia over the last four decades.

4.3.1 Definition, Background and Development of Unit Trust Investment in Malaysia

Unit trust or mutual fund has emerged as a popular investment instrument amongst Malaysian investors particularly for those who are lacking investment resources or skills and have limited access to information related to the stock market. By definition, a unit trust refers to "a collective investment scheme which pools the savings of the public into a special unit trust fund managed actively by professional fund managers"[9]. Another similar definition states that a unit trust is "a form of collective investment that allows investors with similar investment objectives to pool their funds to be invested in a portfolio of securities or other assets"[10]. A unit trust fund is constituted according to a deed executed by the trustee and the manager on behalf of the unit holders, in which, the deed outlines the rights of the unit holders as well as the responsibilities and liabilities of the trustee and the manager. Hence, in principle, there are three parties involved in a unit trust scheme namely the unit holders, the fund management company, and the trustee. The unit holders are the subscribers or investors who purchased the units. However, since the unit holders do not purchase the securities in the portfolio directly, they become the ultimate beneficiary of the scheme and receive their return in the forms of income distribution (dividend) and/or capital appreciation. The fund management company (or "the manager") is the entity that creates and offers the unit trust scheme and is responsible for all administrative and marketing activities of the unit trust scheme. The investment function of the unit trust fund however, is handled by fund/investment managers comprising of investment experts who are responsible for trading activities including buying and selling of securities and asset allocation strategy. The fund/investment managers may either be sourced internally or externally by the fund management

[9] Definition by Permodalan Nasional Berhad (PNB). See http://www.pnb.com.my.
[10] Definition by Federation of Malaysian Unit Trust Managers (FMUTM). See http://www.fmutm.com.my.

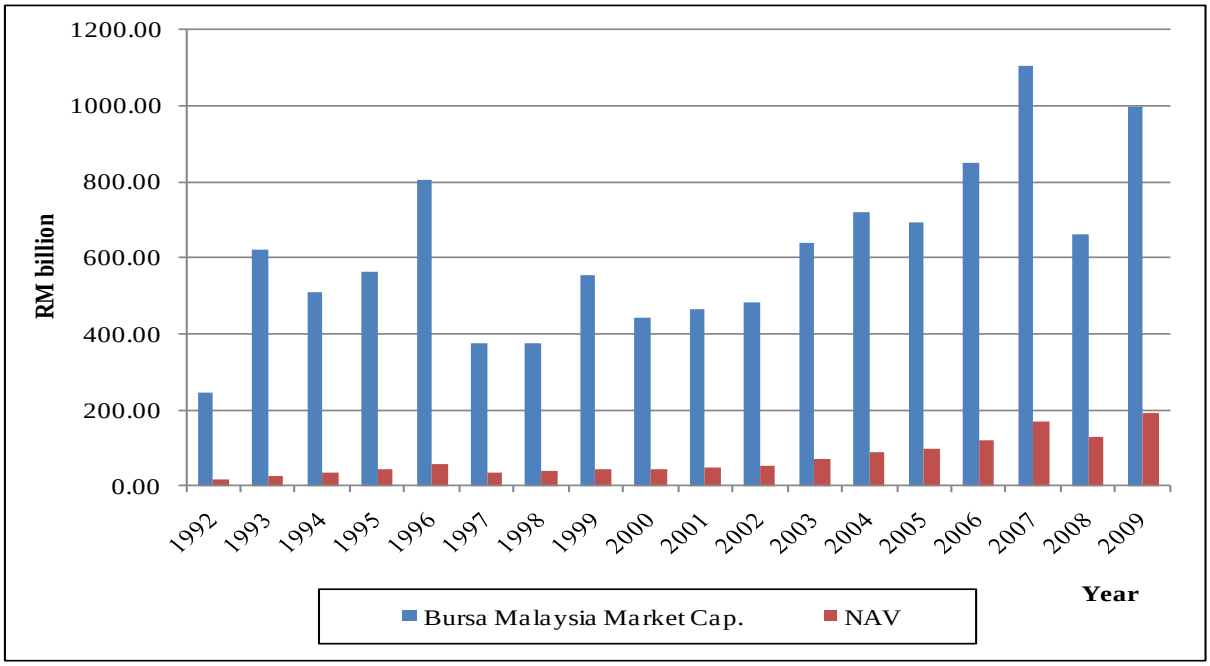
company. The trustee is the registered holder of the assets or securities purchased using the unit trust fund by the fund management company on behalf of the beneficiary. In Malaysia, the establishment and operation of unit trust funds is governed by the Capital Market and Services Act, 2007 whilst the SC is the regulatory body of the unit trust fund industry.[11]

Although the first unit trust in Malaysia was introduced as early as in 1959 by the Malayan Unit Trust Ltd., the development of the unit trust industry during its first two decades however, was hampered by the lack of public interest and slow growth in sales of the units. Only 18 unit trust funds were launched by five fund management companies during the period. Unit trust investment suddenly became popular in the 1980s following the successful launch of the Amanah Saham Nasional (ASN) Scheme by Permodalan Nasional Berhad (PNB) on the 20th of April 1981. The ASN Scheme which was primarily designed to mobilise savings from indigenous *Bumiputera* (Malays and other native ethnics) population received an overwhelming response when more than 170,000 *Bumiputeras* participated by subscribing the ASN units during the first week of its launch. The following decade witnessed several other significant developments take place in the Malaysian unit trust industry including the centralisation of the unit trust industry regulation under the SC, the implementation of the Securities Commission (Unit Trust Scheme) Regulations in 1996, further deregulation of the industry and greater product innovation.

Reflecting the strong growth of the unit trust industry, the net asset value (NAV) of the industry grew by an average of 19.2 per cent per year during the 1992 to 2009 period as shown by Figure 4.2. As at end of 2009, the total NAV of the Malaysian unit trust industry stood at RM191.7 billion representing 19.2 per cent of the total market capitalisation of the Bursa Malaysia exchange. The steady increase of the NAV since the year 2000 was primarily supported by the strong recovery of the Malaysian stockmarket after the Asian financial crisis during the 1997 and 1998 period.

[11] See Permodalan Nasional Berhad's (PNB) website at http://www.pnb.com.my.

Figure 4.2: Total NAV of Unit Trust Funds versus Bursa Malaysia Market Capitalisation



Source: Modified data from Federation of Investment Managers Malaysia (FIMM)

The unit trust industry continued to enjoy strong growth, averaging at 19.2 per cent per annum during 2000 to 2007, with the total NAV nearly quadrupling to RM169.41 billion at the end of 2007 comprising of 15.32 per cent of the total market capitalisation of the Bursa Malaysia. This was achieved on the back of the strong recovery in the Malaysian stock market coupled with aggressive marketing and product diversification by fund management companies. The industry has also benefited largely from further liberalisation on rules pertaining to foreign investment that allows numerous fund management companies to launch offshore funds aimed at having more than 50 per cent exposure in overseas investment. The drastic increase of offshore funds launched by fund management companies from 10 funds in 2005 to 38 funds as at the third quarter of 2006 clearly indicates the huge interest among fund management companies to diversify their investment internationally.

The summary statistics of the Malaysian unit trust fund industry for the six years period from 2004 to 2009 as shown in Table 4.3 provides additional evidence of the steady growth of the unit trust fund industry in Malaysia. Although the number of fund management companies has increased only marginally from 36 companies as at end 2004 to 39 companies as at end 2009, the total number of funds offered nearly doubled from 273 funds to 541 funds during the same period. The total units in circulation of 273.88

billion as at end 2009 is twice the total units circulated as at end 2004 of 118.63 billion whilst the NAV of RM191.71 billion is 119 per cent higher than RM87.39 for the two comparative years, respectively. On an average basis, each of the fund management companies in 2004 have eight funds with 3.30 billion units under their management and the number increased to 14 funds with 7.02 billion units in 2008. In terms of value, the total NAV rose at an average rate of 17.5 per cent per annum during the period.

However, the dismal stock market performance, due largely to profit taking activities after the market rally in the first-half of 2007 and poorer economic outlook particularly during the first six-months of 2008 amid political uncertainties surrounding the Malaysian 12th general election, has reduced the per unit NAV significantly from RM0.81 as at end 2007 to RM0.55 as at July 2009. It was the first time that the NAV ever registered negative growth in a ten consecutive years period especially considering the stronger double digit growth in the total NAV achieved since 2002. The average NAV per unit however, improved to RM0.70 in 2009 as the Malaysian stock market recovered starting from the second half of 2008. The high correlation between the Malaysian unit trust industry and the stock market performance is not surprising as a substantial portion (more than 35 per cent of the NAV) of the private unit trust funds are invested in the equity market.

Another issue worth mentioning here is that Islamic unit trust funds have collectively managed to sustain their value at a time when conventional unit trust funds have failed. Despite the poor stock market performance in the 2007–2008 period, the total NAV of Islamic funds has increased by 31.5 per cent from RM16.8 billion as of December, 2007 to RM22.1 billion as of December, 2009, thus raising the Islamic funds' share in the total industry's NAV from 10.0 per cent to 11.5 per cent. In contrast, the NAV of conventional funds only increased by 12.2 per cent whilst its share of the total NAV reduced to 88.5 per cent during the same period. The ability of Islamic funds to maintain their investment value amid the difficult stock market environment reflects the quality of assets held by these funds.

Table 4.3: Summary Statistics of the Malaysian Unit Trust Fund Industry

	12/2004	12/2005	12/2006	12/2007	12/2008	12/2009
No. of Management Companies	36	36	38	39	39	39
No. of Approved Funds*	291	340	411	506	550	565
▪ Conventional	220	257	314	378	409	415
▪ Islamic-based	71	83	97	128	141	150
No. of Launched Funds	273	323	387	484	532	541
▪ Conventional	208	244	295	360	392	397
▪ Islamic-based	65	79	92	124	140	144
Units in Circulation (in billion)	118.627	139.386	153.719	206.835	236.392	273.879
▪ Conventional	105.472	120.762	135.245	170.563	187.535	217.031
▪ Islamic-based	13.155	18.624	18.474	36.272	48.857	56.848
No. of Accounts (in '000)#	10,425	10,861	11,164	12,275	13,047	14,105
▪ Conventional	9,998	10,221	10,398	11,024	11,411	12,328
▪ Islamic-based	427	640	765	1,250	1,636	1,777
Total NAV (in RM billion)	87.385	98.485	121.410	168.029	130.436	191.706
▪ Conventional	80.624	89.998	112.309	151.244	114.318	169.626
▪ Islamic-based	6.761	8.487	9.101	16.785	16.118	22.080
Bursa Malaysia Market Capitalisation (in RM bil)	722.04	695.27	848.70	1106.15	663.80	999.45
% of NAV to the Mkt. Cap.	12.10	14.17	14.31	15.19	19.65	19.18
Ave. funds per FMC	8	9	10	13	14	14
Ave. units per FMC (in bil)	3.30	3.87	4.05	5.30	6.06	7.02
Ave. NAV per FMC (in RM bil)	2.43	2.74	3.20	4.31	3.35	4.92
Ave. NAV per unit (RM)	0.74	0.71	0.79	0.81	0.55	0.70
Ave. NAV per unit (RM):						
▪ Conventional	0.76	0.75	0.83	0.89	0.61	0.78
▪ Islamic-based	0.51	0.46	0.49	0.46	0.33	0.39

Note:
* - Includes funds approved but not yet launched.
\# - Not including unit holders account at IUTA that operates nominee account system.
FMC - Fund management companies
Source: Modified data from Securities Commission of Malaysia (SC)

4.3.2 Conclusion

This section has examined the development of the unit trust fund industry in Malaysia. Despite remaining relatively unknown during the first two decades after the first fund was launched in 1959, unit trust funds have emerged as a popular investment instrument as is evident from the tremendous growth achieved by the industry, particularly in the past 10 years. Demand for unit trust funds is expected to grow and more innovative products are poised to be introduced into the market amid increasing competition and as fund

management companies endeavour to meet demand from more sophisticated investors. One noticeable development in the industry is the growing popularity of Islamic unit trust funds. The following section analyses the development of Islamic-based investment in Malaysia.

4.4 OVERVIEW OF ISLAMIC-BASED INVESTMENT IN MALAYSIA

This section looks into the emergence and development of Islamic-based investment in Malaysia, a country in which Islamic finance and banking services have enjoyed strong growth while running in parallel with their conventional counterparts. The section is intended to provide a better understanding of how Islamic-based investment has evolved in Malaysia initially in the form of Islamic banking products and services which later expanded into securities dealing, insurance (*takaful*), unit trust funds, bonds (*sukuk*) and commodity investments.

4.4.1 History, Development and Trends

Malaysia has long recognised the Islamic finance and banking industry as a niche market and has positioned itself well to tap the huge potential offered by this relatively new market. The inception of Bank Islam Malaysia Berhad (BIMB) on the 1st of July 1983 as the first fully-fledged Islamic bank in the country and arguably one of the earliest Islamic banks in the world signifies the Malaysian government's commitment to make Malaysia a global hub for Islamic finance and investment. Although BIMB was established primarily to cater for the retail banking needs of half of the country's Muslim population, the bank has over the years transformed itself into a finance conglomerate offering various financial products and services including insurance (*takaful*), stockbroking and unit trust management that comply with the *Shariah* principles in addition to its usual consumer and corporate banking products and services. It was through BIMB that devout Muslim clients particularly during the 1980s were able to find alternative investment instruments to conventional financial products by subscribing to the bank's *mudharabah* type investment account. In addition, Malaysia has earned the reputation as one of the pioneers of Islamic finance and banking industry with comprehensive regulatory frameworks and sound infrastructure to ensure successful implementation of the Islamic

finance and banking system. Its status as a liberal and dynamic Islamic country enjoying strong relationships with the other Muslim nations gives valuable access to the vast capital of wealthier Islamic countries particularly from the Middle East.

The last three decades has seen a rapid expansion in the Islamic finance and banking industry that facilitates the development of the Islamic capital market in Malaysia significantly. Today, a pious Muslim investor in the country has a wider menu of *Shariah*-compliant investment products ranging from equity, insurance, unit trust, bond and commodity that meets with his/her investment needs. The availability of diverse Islamic financial instruments was made possible through product innovation following extensive research and development in this area by industry players and the SC, in particular. For instance, Bursa Malaysia alone offers more than 800 *Shariah*-approved stocks, two listed Islamic real estate investment trusts (REITs), one tradable Islamic stock market index, two Islamic derivative products, and an Islamic debt (*Sukuk*) market through the Labuan International Financial Exchange (LFX), its wholly-owned subsidiary company. In August 2009, Bursa Malaysia launched the Commodity Murabahah House (CMH), a commodity exchange using the *murabahah* (cost-plus) principle, which is primarily a national project undertaken together with Bank Negara Malaysia (BNM), the Securities Commission (SC) and the palm-oil industry players under the leadership of Malaysia International Islamic Financial Center (MIFC). The new commodity exchange was later known as Bursa *Suq al-Sila'*.

Indeed, Bursa Malaysia provides considerable opportunity for those investors seeking Islamic-based investment products. In the equity market, from the total 980 securities listed on Bursa Malaysia Securities Berhad, 855 securities or 87.2 per cent are approved as *halal* (permissible for investment) or *Shariah*-compliant by the *Shariah* Advisory Council (SAC) of the SC as at 28th November 2008. Collectively, the market capitalisation of the *halal*-approved stocks is valued at RM627.84 billion, or 64 per cent of the total market capitalisation of RM971.28 billion. With exception of those companies listed in mining, hotels and closed-end fund sectors, investors would be able to find and choose *Shariah*-compliant stocks in any other sectors including finance, technology and trading/services sectors. Even more encouraging is that nine in every ten companies listed in Consumer Products, Industrial Products, Construction and Technology sectors are *Shariah*-compliant. Table 4.4 gives the fraction of the *halal*-

approved companies listed on Bursa Malaysia whilst a complete list of the *Shariah*-approved securities released by the *Shariah* Advisory Council of the SC as of 28th November 2008 is given in Appendix I. In addition, investors who wish that their securities trading and transaction activities are undertaken in accordance with the *Shariah* principles can opt to trade either through a fully-fledged Islamic stockbroking firm or through any conventional stockbroking firms which are also offering Islamic share trading services through Islamic window concept.

Table 4.4: *Shariah*-Compliant Securities on Bursa Malaysia

Main Board/Second Board/MESDAQ Market	*Shariah*-Compliant Securities	Total Securities	Percentage of *Shariah*-Compliant Securities
Consumer Products	123	133	92
Industrial Products	286	297	96
Mining	Nil	1	Nil
Construction	51	54	94
Trading/Services	171	205	83
Properties	75	91	82
Plantation	39	44	89
Technology	100	102	98
Infrastructure (IPC)	5	7	71
Finance	5	41	12
Hotels	Nil	4	Nil
Closed-end Fund	Nil	1	Nil
TOTAL	855	980	87

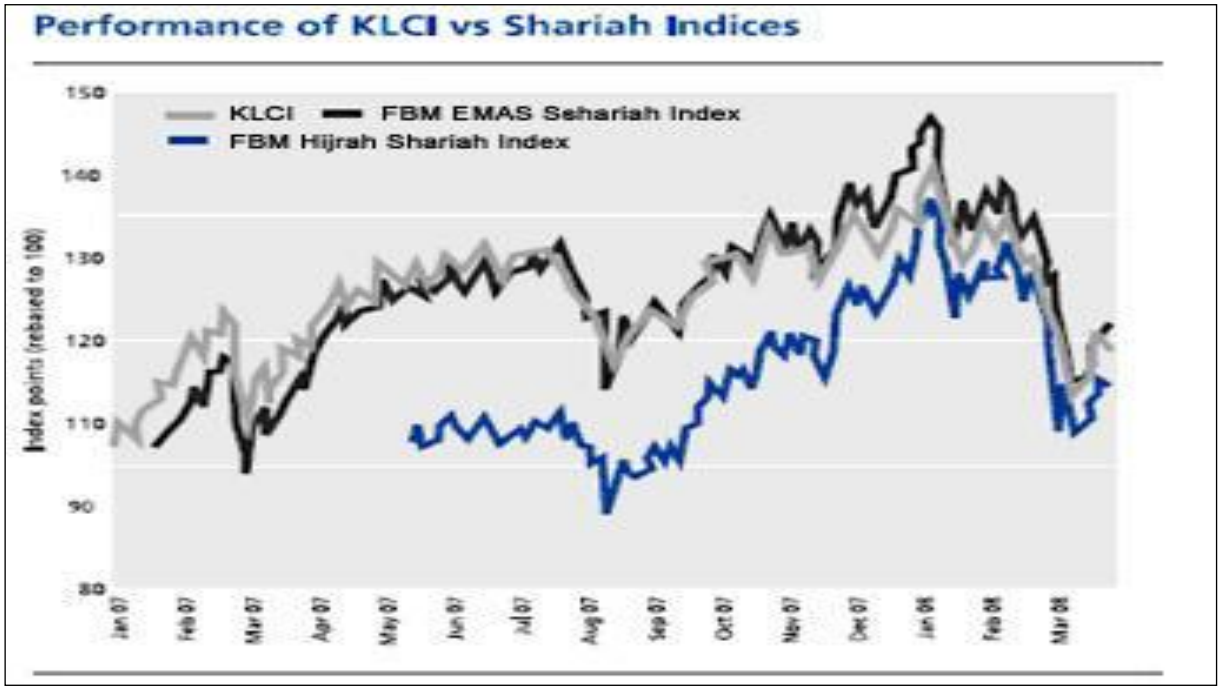
Source: Securities Commission (SC) of Malaysia

The overall performance of the *Shariah*-approved stocks is monitored by a dedicated index, the FTSE Bursa Malaysia EMAS *Shariah* Index (FBMSHA), which comprises of *Shariah*-compliant stocks listed in the FTSE Bursa Malaysia EMAS Index (FBMEMAS).[12] In order to provide more trading opportunity by capitalising on the stock market movement, Bursa Malaysia has also introduced a tradable *Shariah* index namely the FTSE Bursa Malaysia Hijrah *Shariah* Index (FBMHIJRAH), which comprises the 30 largest *Shariah*-approved stocks in the FBMEMAS index that meets all three of the following screening processes: the FTSE's global standards of free float, liquidity and

[12] FBMEMAS comprises both the FTSE Bursa Malaysia 100 Index and the FTSE Bursa Malaysia Small Cap Index component stocks. The former constitutes mainly the 100 largest stocks measured by market capitalisation whilst the latter is composed of the top 98 per cent of the Bursa Malaysia Main Board excluding constituents of the FTSE Bursa Malaysia 100 Index.

investability; the Yassar's International *Shariah* screening methodology; and the Malaysian SC's *Shariah* Advisory Council (SAC) screening methodology. Figure 4.3 illustrates the performance of both the *Shariah* stock market indices (FBMSHA and FBMHIJRAH) vis-à-vis the Kuala Lumpur Composite Index (KLCI) for period from January 2007 to March 2008.

Figure 4.3: Performance of KLCI versus *Shariah* Indices (January 2007 – March 2008)



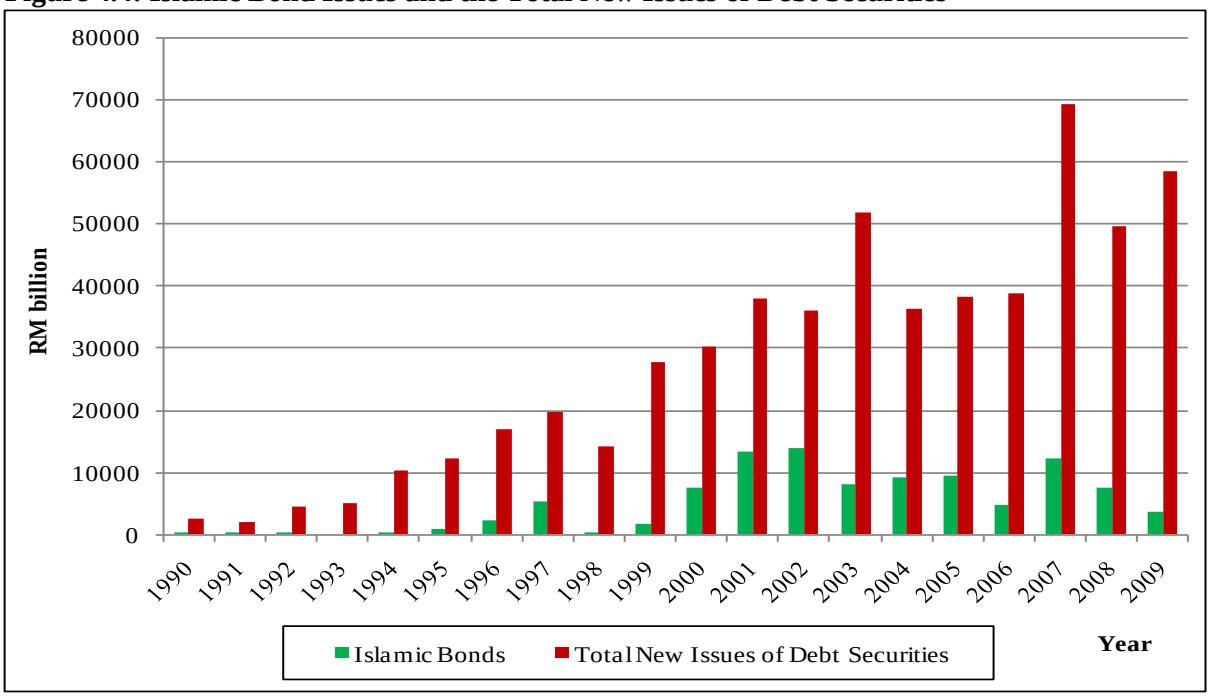
Source: Bursa Malaysia Berhad

A casual observation on the price chart reveals that the performance of *Shariah*-approved stocks as represented by the broader FBMSHA index is positively correlated with the performance of the KLCI with the former moving closely in tandem with the fluctuation in the latter. Similar performance is also observed with the tradable FBMHIJRAH index. The positive correlation between the two *Shariah* indices and the KLCI is attributed to both the *Shariah* indices being partially made up of the same KLCI's component stocks. Therefore, the positive correlation implies that the KLCI has significant influence over the performance of the *Shariah* indices particularly on FBMHIJRAH. Consequently, any trading strategy intended to capitalise on the movement of the tradable FBMHIJRAH index should take into consideration the strong correlation between the *Shariah* index and the key market benchmark index.

On the derivative market, two out of nine products traded on Bursa Malaysia Derivative Berhad are *Shariah*-compliant namely the Crude Palm Oil Futures (FCPO) and the Single Stock Futures (SSF). The availability of derivative products allows investors to diversify their investment into the futures market either as a risk management tool in their hedging strategy or simply for trading purposes. Unfortunately however, derivative trading is still largely unpopular among retail Muslim investors due to the small number of investors involved in large-scale commodity-related business, the lack of knowledge and required skill necessary for trading in the derivative market as well as the inadequate number of *Shariah*-approved derivative instruments currently available. Despite the rather limited success, the availability of the two futures derivative products does indicate the potential of the *Shariah*-compliant derivative market, nonetheless.

Another investment instrument which is readily available for Muslim investors in Malaysia is Islamic-based private debt securities. Interestingly, as shown in Figure 4.4, Islamic bonds, virtually unknown prior to 1990, has emerged as a viable financing option particularly in the 2000s. The strong interest towards Islamic bonds is apparently stimulated by the growing popularity of private debt securities especially corporate bonds as an alternative source of financing beginning from the mid-1990s due to the higher interest rates of conventional loans as well as the high volatility of the Malaysian stock market during that period. Notwithstanding however, although the value of Islamic bonds is still far below conventional bonds' value, it is gaining importance as reflected by the double-digit growth of the Islamic bond's share in the total new debt issues from the yearly average of 8.9 per cent in the 1990s to 21.6 per cent in 2000 to 2009 period. This certainly provides a clear evidence of the increasing popularity of Islamic bonds among corporate issuers and signifies the huge potential of this segment of the Malaysian bond market.

Figure 4.4: Islamic Bond Issues and the Total New Issues of Debt Securities



Source: Modified from various issues of Bank Negara Malaysia's Monthly Statistical Bulletin

Apart from the success in the domestic Islamic bond market, Malaysia has also established a well developed offshore market for Islamic debt instruments or *Sukuk* through the Labuan International Financial Exchange (LFX). Performance is impressive with RM7.1 billion or 88 per cent from the total RM8.1 billion worth of new listings for debt capital market instruments on LFX in 2007 actually comprising of new *Sukuk* issues structured based upon the *musharakah* (profit sharing) or *ijarah* (leasing) concepts. For the period from 2001 to 2007, Malaysia ranked second after the United Arab Emirates (UAE) with 32.1 per cent share of the global *Sukuk* market as compared to 36.2 per cent for UAE. Malaysia however, has the largest number of *Sukuk* issues totalling 137 against UAE's 29. The success of the *Sukuk* issues within a short span of time implies a strong domestic and international interest towards Islamic debt instruments as a viable financing alternative to conventional debt instruments.

Compared to the various investment instruments discussed above, the Islamic unit trust fund is arguably the most popular among the general investing public seeking *Shariah*-compliant investment instrument. The huge interest towards unit trust investment is easily understandable in view of the numerous benefits offered by this type of investment particularly in terms of price stability, reasonable return with less risk

exposure, and convenience especially for individual investors having limited investment resources and skills. Although the size of the Islamic fund industry is still relatively small compared to its conventional counterpart, its growth has exceeded that of conventional fund industry over the past four years as is evident from Table 4.3 (page 94). As of 31st of July 2008, the SC has approved 144 Islamic unit trust funds representing 25 per cent of the total approved funds, and more than double the 71 Islamic funds approved in 2004. During the same period, the number of Islamic funds launched also doubled from 65 funds to 138 funds whilst both the total units circulated and the total number of unit trust accounts grew three-fold from 13.2 billion to 46.2 billion and from 427,000 accounts to 1.57 million accounts, respectively. Indeed, the figures clearly demonstrate the growing interest and huge prospects of Islamic unit trust funds among Malaysian investors.

4.4.2 Actual Performance of Islamic Unit Trust Funds in Malaysia

The actual performance of unit trust funds in Malaysia, shown in Table 4.5, reveals that Islamic funds generally underperform in comparison to conventional funds particularly on a long-term basis. The five-year average annual return of 2.92 per cent for Islamic funds is about half the 4.96 per cent average annual return of Malaysia equity funds. The performance of Islamic smaller capitalised equity funds and Islamic money market funds are even more disappointing as each posted average annual losses of 1.13 per cent and 5.58 per cent, respectively. Islamic bond funds however, did particularly well registering an average of 1.79 per cent return per annum for the five-year period as compared to negative 0.12 per cent losses per annum by conventional bond funds. The impressive performance is in line with the substantial increase in the total Islamic bond issues during 2001 to 2005 period as highlighted previously in Figure 4.4.

Interestingly, Islamic-based small-capitalised stock funds are the best performing funds on a short-term basis with its 3-month and 6-month cumulative return of 20.08 per cent and 21.20 per cent, respectively, far exceeding the performance of other types of unit trust funds either Islamic or conventional. The encouraging performance is partly due to the strong recovery in the Malaysian stock market during the first six months of 2009 after a rather dismal performance in 2008. The superior performance of small-capitalised stock funds suggests the presence of the *small firm effect* since the majority of *Shariah*-

compliant equities as well as the FTSE BM Emas Index and the FTSE BM 2nd Board Index component stocks comprise of companies with small market capitalisation, albeit it may be rather premature to attribute the strong performance to the *small firm effect* at this stage without further analysis. It is worth mentioning here that Islamic-based small-capitalised stocks funds substaintially outperformed the Second Board Index in all period classifications. Notwithstanding however, the actual data also indicates the high volatility of smaller size stocks as reflected from the substantial one-year cumulative losses incurred by the Islamic small-capitalised stocks funds and the small stocks index funds. On the other hand, the data indicates the stability of investment in large capitalised stocks as reflected from the consistent performance of the KLCI as well as the Malaysia equity and Malaysia Islamic equity funds.

Table 4.5: Average Performance of Malaysian Unit Trust Funds as at 9th of July, 2009

Fund Name	Cumulative Performance					5-yr annual return
	3-mths	6-mths	1-year	3-years	5-years	
Malaysia Equity	15.08	16.77	-3.27	24.15	29.60	4.96
Malaysia Islamic Equity	11.75	14.27	-4.71	19.37	17.06	2.92
Malaysia Equity – Smallcap:						
KLSE Composite Index	16.10	15.95	-6.50	15.14	24.78	4.53
FTSE BM Emas Index	19.09	19.29	-5.32	18.90	22.82	4.20
FTSE BM 2nd Board	17.84	18.13	-12.10	-24.25	-40.11	-9.75
Malaysia Islamic Equity – Smallcap	20.08	21.20	-7.58	29.36	-5.42	-1.13
Malaysia Bond	1.34	1.82	1.82	6.99	8.35	-0.12
Malaysia Islamic Bond	1.20	2.14	5.53	7.95	9.84	1.79
Malaysia Money Market	0.34	-3.38	-2.61	-0.57	-0.37	-0.42
Malaysia Islamic Money Market	0.16	0.47	1.13	1.87	-4.24	-5.58

Source: *The Edge Malaysia*, 13th July 2009

4.4.3 Conclusion

Islamic-based investment has achieved remarkable performance over the past three decades while operating in parallel with conventional investment instruments. The success was encouraged by the strong commitment of the Malaysian Government particularly through the SC in line with the aspiration to make Malaysia a global Islamic

financial centre, the continuous support from general investors towards Islamic banking and finance products and services, as well as the appeal of *Shariah*-compliant investment instruments as viable alternatives to conventional investment instruments. Malaysia currently has a fully developed Islamic capital market which gives investors a wider menu of *Shariah*-approved investment instruments including equities, derivatives, bonds (*Sukuk*), insurance (*takaful*) and unit trust funds. The impressive growth of the Islamic fund industry has attracted interest not only among the general investing public but also among academia to examine the true performance of Islamic funds. This chapter continues with a review of past literatures analysing the performance of conventional and Islamic-based unit trust funds in Malaysia.

4.5 SURVEY OF EMPIRICAL STUDIES ON THE PERFORMANCE OF CONVENTIONAL AND ISLAMIC UNIT TRUST FUNDS IN MALAYSIA

Unit trust or mutual fund is arguably one of the most popular types of investment instrument in Malaysia, particularly among investors with limited investment skills or resources. This is reflected by Table 4.3 (page 94) which reveals that both conventional and Islamic unit trust funds have enjoyed considerable growth over the last four years. In view of the large subscription by general investors and the sizeable amount of capital pooled by fund management companies, several studies have attempted to analyse the funds' return performance in order to determine the investment worthiness and to gauge fund managers' investment skills and ability to generate above-the-market return for unit trust investors. However, since unit trust funds are considered a relatively new investment, past studies especially those undertaken in the 1990s are rather scarce whilst the robustness of their findings is constrained by the lack of sample of unit trust funds and price data. Nevertheless, some empirical studies pertaining to the performance of both the conventional and Islamic unit trust funds in Malaysia are discussed below.

4.5.1 Review of the Performance of Conventional and Islamic Unit Trust Funds in Malaysia

It is somewhat unfortunate when the majority of past studies such as by Chuan (1995), Shamser and Annuar (1995), Taib and Isa (2007), Huson Joher (2007) and Low (2007)

have concluded that Malaysian unit trust funds were generally unable to outperform both the market portfolio and the simple buy-and-hold strategy. Their sample consists of a group of local unit trust funds whilst return is calculated using monthly NAV for each fund in their sample. Most studies employed the three traditional portfolio performance measures namely the Sharpe Index, the Treynor Index and the Jensen-*alpha* Index, or their variants to evaluate the funds' performance. Apart from the underperformance, the studies also argued that fund managers are generally lacking both the timing and stock selection skills and are unable to forecast security prices accurately which, in turn, significantly contributes to the poor performance. A recent study by Low and Noor Azlan (2007) analysing the relationship between index fund and the tracked market benchmark index (KLCI) found that the long-run price performance of the index funds does not co-integrate with the KLCI performance. In view that index funds are supposedly designed to replicate the performance of the KLCI to give their investors the opportunity to enjoy similar return to the market, their finding is rather unfortunate since it raises serious concern on whether index funds can actually generate return performance comparable to the market index.

Contrary to the negative findings, a study by Leong and Lian (1998) on 34 unit trust funds found that the funds produce superior return when compared with the market portfolio, thus suggesting that fund managers are able to outperform the market. They employed the three standard portfolio valuation models and used weekly, instead of monthly, NAV covering period from January 1991 to June 1997. The reduced time gap in the weekly NAV allows them to better capture price fluctuations, and hence, the volatility of the return. However, although their finding provides some relief over the concern over fund managers' ability, being the only study that stands in favour of fund managers amid the abundant studies that claim otherwise, the outcome cannot be used to generalise the entire industry. In addition, their finding that growth funds are the best performing funds as compared to both income and balanced funds signifies that there could be selection bias favouring growth-oriented funds since the 1991 to 1997 period coincides with the stock market rally in which growth stocks are the main beneficiaries. Amid the controversial issue surrounding fund managers' performance and ability, Chuan (1995), Leong and Lian (1998), and Huson Joher (2007) claimed that most unit trust funds have a well diversified portfolio, indicating that fund managers do possess some valuable investment skill, nonetheless.

Unfortunately, with regards to Islamic unit trust funds' performance, again past literatures are rather scarce. A casual observation on the performance of the key benchmark index of several world major stock markets including the Kuala Lumpur Composite Index (KLCI) for Malaysia during 1993 to 1996 period led Wilson (1997) to conclude that ethical funds and Islamic funds are not much different from conventional funds. Empirical studies by Yaacob and Yakob (2002), Shah Zaidi *et al*. (2004) and Abdullah *et al*. (2007) found that Islamic funds outperformed the market portfolio or conventional funds. A recent study by Nik Muhammad and Mokhtar (2008) however, refuted the claim of Islamic funds' superiority. The contradictory findings are attributed to the different methodology and samples used by past studies. Islamic funds are able to outperform the overall market when *Shariah* index is used as proxy for the market portfolio, but instead, underperform the overall market when the KLCI is used as the proxy for the market portfolio. In brief, the analysis by Yaacob and Yakob (2002) is based on the performance of a simulated optimal portfolio consisting of five stocks created from a sample of 156 *Shariah*-approved securities using the Cut-Off Rate Model by Elton *et al*. (1976) with the data comprises of daily closing prices from April 1999 to October 2001. Shah Zaidi *et al*. (2004) compared the performance of 12 Islamic unit trust funds against two benchmark indices namely the KLCI and the KL *Shariah* Index (KLSI)[13] using weekly closing prices from May 1999 to May 2003. Abdullah *et al*. (2007) analysed the performance of 65 funds including 14 Islamic funds using the NAV returns calculated on a monthly basis whilst the time period is divided into three sub-periods to account for the 1997 Asian financial crisis. Nik Muhammad and Mokhtar (2008) examined the weekly NAV return of nine Islamic equity funds against the market portfolio represented by the KLSI from 2002 to 2006 period.

Collectively, the differences in methodologies enabled the issue of Islamic funds' performance to be investigated from various perspectives that help enhance the credibility of the findings. Another significant observation is the tendency of Islamic funds to outperform conventional funds only during a bearish market period but underperform during a bullish market period as reported by Abdullah *et al*. (2007) and Abdullah *et al.* (2002; cited in Nik Muhammad and Mokhtar, 2008). The superior performance of Islamic funds particularly during a market downtrend reflects the quality of *Shariah*-

[13] The KLSI index was replaced by the FBMSHA index as the official stock market index that tracks the performance of *Shariah*-approved stocks listed on Bursa Malaysia.

compliant funds' component stocks which normally avoid companies with excessive leverage or companies involved in finance, banking, gambling or other prohibitive activities which are sensitive to the changes in economic and business cycles. Nevertheless, in view of the limited number of studies that have been undertaken in the past, it may be premature to conclude that Islamic funds are superior to conventional or market portfolio, or otherwise.

4.5.2 Conclusion

Past studies have reported that the return of professionally managed, conventional unit trust funds are generally below the market portfolio or even lower than a naïve portfolio that adopts the simple buy-and-hold investment strategy. The dismal performance led to the claim that fund managers generally are lacking the crucial investment skills particularly the stock selection and market timing abilities. While the findings of fund managers' underperformance are consistent with the efficient market hypothesis (EMH) theory, it casts serious doubt to the real benefit of investing in unit trust funds as it appears that professional fund managers, who have been entrusted to manage the pooled funds wisely in order to generate sufficient profit for unit holders in return for a considerable sum of fund management fees, have failed to fulfil their essential duty. Meanwhile, findings on Islamic funds' performance are deemed inconclusive in view of the limited numbers of studies conducted in the past whilst their contradictory findings is attributed to the difference in methodology employed by each study particularly with regards to the benchmark index used as proxy for the market portfolio as well as the sample funds and the price dataset. Therefore, further studies are required in order to improve the quality of the analysis of Islamic funds' performance, in particular.

4.6 CONCLUDING REMARKS

This chapter has discussed at length the growth and the development of the Malaysian stock market and Islamic-based investment in Malaysia. Historical data pertaining to the performance of the stock market both in terms of the value and trading volume as well as the market size and the number of listed companies clearly indicate that the Malaysian stock market has performed exceptionally well. The majority of the significant

developments in the Malaysian stock market however, were implemented during the last two decades particularly after the 1993 market rally. The two most significant developments are the establishment of the Securities Commission (SC) in 1993, and the consolidation of various exchange bourses into a single trade exchange for Malaysia followed by the demutualization exercise of Bursa Malaysia Berhad. The establishment of the SC has greatly improved the market supervision and regulation, thus increasing efficiency and ensuring an orderly development of the Malaysian capital market in line with the objectives of the Malaysian Capital Market Masterplan (CMP). The merger of all the different exchanges that trade in equity, commodity, financial derivatives and offshore market operations into a single trade exchange under the Bursa Malaysia Berhad has further strengthened the Malaysian capital market. Despite the high market volatility as witnessed during and after the crisis period, the Malaysian stock market has nevertheless remained an attractive investment avenue for individual and institutional investors as well as for fund raising activities for both private and public sectors.

As Malaysia aspired to become a global Islamic financial and investment centre, the country has positioned itself well by developing a comprehensive infrastructure and regulatory framework to cater for the needs of Islamic finance and banking industry. Malaysia is among several countries that have a dual financial system in which its Islamic finance and banking system is running successfully in parallel with conventional finance and banking. Hence, a devout Muslim investor in the country who seeks *Shariah*-compliant investment instruments shall be able to find *halal*-approved investment instruments including equities, commodity, derivatives, fixed income securities, insurance or other *Shariah*-approved financial products that suits his/her investment needs without much difficulty. In this regards, Bursa Malaysia offers a wide range of *Shariah*-compliant instruments such as listed companies' common stocks, commodity futures derivatives, and *Sukuk* bond issues.

The success of the Malaysian stock market has provided the impetus for the growth and development of the unit trust fund industry in the country. At present, unit trust investment is arguably one of the most popular types of investment instruments particularly among investors with limited investment resources or skills. Ironically however, past studies have revealed that the performance of professionally managed conventional unit trust funds in general is below the market return or even lower than the

naïve buy-and-hold strategy. This finding, although consistent with the EMH theory, raises serious doubt about the true value of investment in unit trust funds, and the actual capability of the fund managers who have been entrusted to manage the funds. Similar studies on the performance of Islamic unit trust funds in Malaysia found that Islamic funds could outperform the market when the *Shariah* index is used as proxy to the market portfolio instead of the KLCI. However, when the KLCI is used to represent the market portfolio, Islamic funds underperform the market. The different key benchmark indices used together with the limited number of studies conducted in the past and the differences in the sample and methodology employed by previous studies has contributed to inconsistencies in the findings related to Islamic funds' performance, thus rendering the findings to be rather inconclusive. Therefore, a more comprehensive study is needed to further explore the issues pertaining to the characteristics and performance of Islamic funds, which this study endeavours to do. The next chapter will explain the research methodology used in this study.

Chapter 5
RESEARCH METHODOLOGY

5.1 INTRODUCTION

It is reasonable to assume that the accuracy of the findings of a study depends heavily on how in-depth the research problems are investigated and how comprehensive the analysis is undertaken. A thoroughly planned and well executed research would likely yield less dubious results that can be used to generate meaningful inferences and hence, reliable findings and conclusion. Therefore, realising the significance of a properly constructed research, this study endeavours to examine the issues related to Islamic funds' characteristics, operations and performance comprehensively by employing both quantitative and qualitative analytical tools.

This chapter elaborates the research methodology employed in this study. The chapter begins with a definition of selected terminologies used in this study that specify the intended scope of the analysis as well as a brief description of the levels of analysis involved. Subsequently, the general plan of the study is explained in the research design followed by a discussion on the analysis framework in the research strategy section. The chapter continues with elaboration of the two research methods used in this study, including the purpose of the methods, the research tools used, the research modelling and the data analysis approach. The chapter then ends with a conclusion.

5.2 RESEARCH METHODOLOGY AND LEVEL OF ANALYSIS

As mentioned in Chapter 1, the primary purpose of this study is to investigate the return and risk characteristics of Islamic and conventional funds in order to identify the main factors that contribute to the differences between the performances of the two types of funds. The study also attempts to examine the actual fund management practice and operation of Islamic funds as such input is expected to be highly valuable to this study. The findings are crucial in order to achieve the ultimate aim of this study which is to

contribute positively to the development of the Islamic fund industry by exploring the possibility of improving the assessment method of Islamic funds. Two research methodologies are used in this study namely *quantitative analysis* and *qualitative analysis*. For the quantitative analysis method, the scope of the analysis is focussed upon determining the salient features in return and risk characteristics of Islamic funds as compared to conventional funds. The scope of the qualitative analysis method is confined to obtaining information from Islamic fund managers on issues pertaining to the operation, performance and valuation of Islamic funds. To ensure that the study will remain within the scope so outlined, some of the important terminologies used in this study are explained below.

'Hypothetical portfolios' refers to three price-weighted portfolios, comprising entirely of the equities of Malaysian listed companies, which were created specifically for the purpose of this study. The three hypothetical portfolios are: (1) 'Conventional Portfolio' (acronym: CP) to represent conventional or unrestricted funds, of which, its component consists of both *Shariah*-compliant and non-*Shariah*-compliant stocks; (2) '*Shariah*-Approved Portfolio' (acronym: SAP) to represent Islamic funds, of which, its component comprises only *Shariah*-compliant stocks; and, (3) ''Non-*Shariah*-Approved Portfolio' (acronym: NSAP) to represent the *haram* or 'sin' funds, of which, its component consists only *haram* (forbidden) stocks according to Islamic *Shariah* law. Each of the portfolios is divided into four sub-portfolios based on the size of their market capitalisation with the Group 1 portfolio (CP1, SAP1, NSAP1 series) comprising of stocks with the largest market capitalisation whilst the Group 4 portfolio (CP4, SAP4, NSAP4 series) consists of stocks with the smallest market capitalisation. It is worth mentioning here that while both conventional and Islamic funds are readily available in the market, there is no equivalent of a 'sin' fund available in Malaysia. Therefore, the rationale of creating the NSAP portfolio is primarily for comparative analysis purposes.

'*Shariah*-compliant stocks' refers to Malaysian listed securities which are approved as *halal* (permissible) by the *Shariah* Advisory Board of the Securities Commission of Malaysia (the SC). The study uses the *Shariah*-compliant list as at the 28th of November 2008 in which 855 stocks were endorsed as *Shariah*-compliant representing 87 per cent of the total 980 companies listed on Bursa Malaysia Securities

Berhad. Throughout the study, the term '*Shariah*-compliant' is used interchangeably with '*Shariah*-approved' or '*halal*-approved' and carries similar meaning.

'Non-*Shariah*-compliant stocks' refers to Malaysian listed securities which are regarded as non-permissible or *haram* (forbidden) under the Islamic *Shariah* guidelines. Since the list of *Shariah*-compliant securities issued by the SC only shows *halal*-approved stocks, securities which are not included in the list are therefore considered as non-*Shariah*-compliant stocks. Throughout the study, the term 'non-*Shariah*-compliant' is used interchangeably with 'non-*Shariah*-approved' or 'non-*halal*' and carries similar meaning.

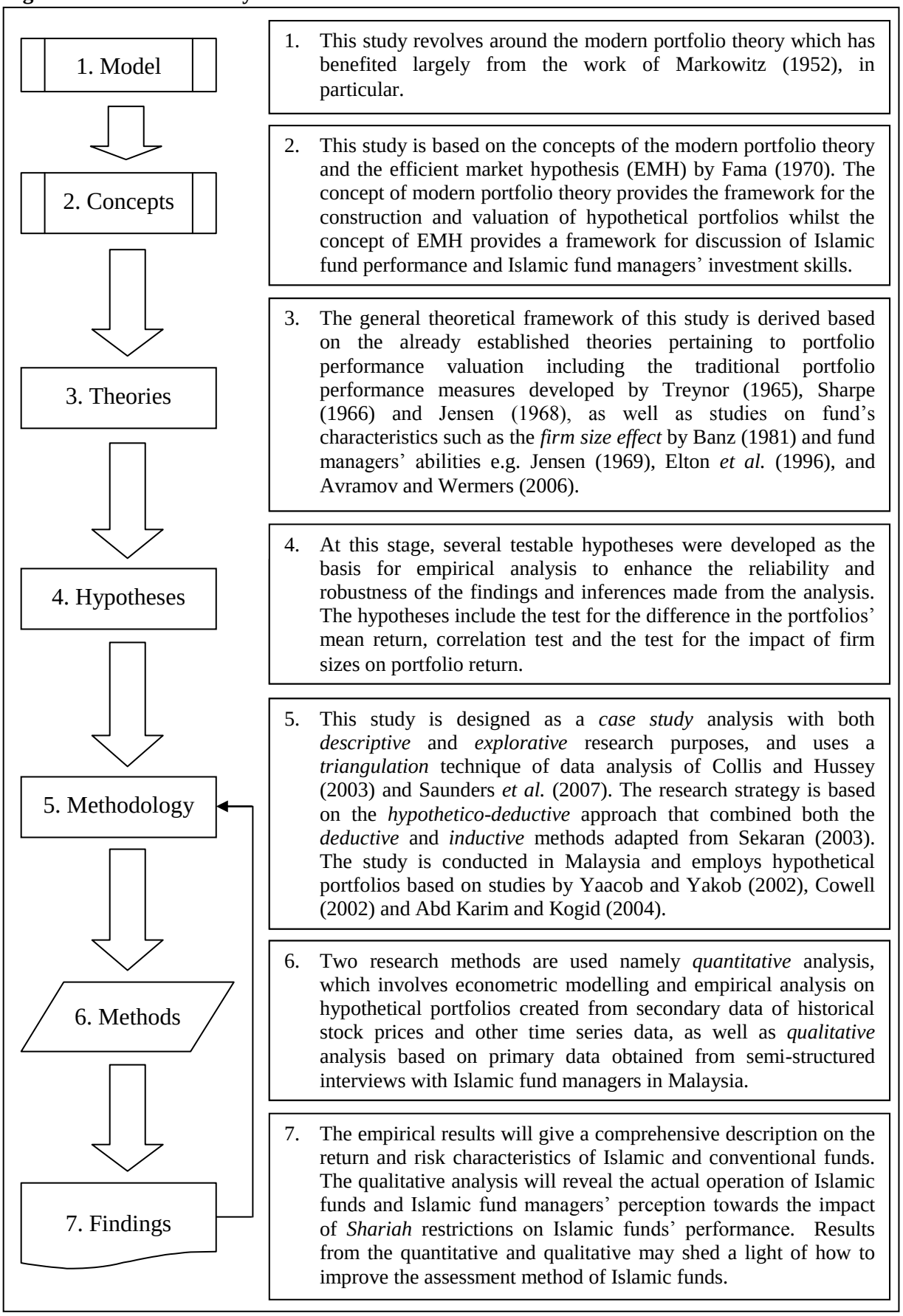
'Fund management companies' refers to the business entities that create and offer unit trust or mutual funds to the general investing public. The fund management companies are responsible for the operations of the funds including the administrative, marketing and fund management activities of the funds.

'Fund/investment managers' refers to portfolio managers whom are regarded as the investment experts hired by fund management companies to manage the pooled investment based on certain portfolio mandates. The fund/investment managers may be hired internally or outsourced from a third party offering such services.

In general, there are seven levels of analysis which summarise the entire research process of this study as depicted in Figure 5.1 (page 113). The basic theoretical framework of this study is derived based on the modern portfolio theory and the efficient market hypothesis (EMH). The modern portfolio theory provides the framework for portfolio construction and valuation including portfolio return and risk analysis as well as portfolio performance measurement. The EMH theory provides the framework for discussion of fund performance and fund managers' investment skills. Based on inputs from literature review on modern portfolio theory and past empirical studies related to the performance of mutual funds, several hypotheses are made and the research methodology is formulated to address the hypotheses. In this respect, the main advantage of this study which makes it essentially different from previous studies is the combination of both the quantitative analysis and qualitative analysis methods. The quantitative analysis will give the general profile of Islamic funds' return and risk characteristics whilst the qualitative

analysis, undertaken primarily to complement the quantitative analysis, will reveal the current Islamic funds' operation as well as Islamic fund managers' perception towards the impact of *Shariah* restrictions on Islamic funds' performance. By conceptualising the results obtained from both the quantitative and qualitative analysis methods, it would be possible to derive more comprehensive findings than ever achieved by previous studies, and paves the way for the formulation of practical means of improving the assessment method of Islamic funds. This rare combination will further enhance the reliability of the findings of this study and avoid the study from merely becoming a pure academic exercise.

Figure 5.1: Levels of Analysis



Source: Adapted from Asutay (2007)

5.3 RESEARCH DESIGN

Research design is basically a general plan on how research questions will be answered. It outlines the objectives of a study clearly, specifies the sources of data to be collected, and identifies possible constraints that may affect the study (Saunders *et al.*, 2007: 131). According to Sekaran (2003), the purpose of a study can either be based on exploratory, descriptive, hypothesis testing, or case study analysis. Saunders *et al.* (2007) however, propose a narrower classification when they state that a research purpose can either be exploratory, descriptive or explanatory, or any combination of the three.

In brief, a *descriptive study* is suitable if the purpose of the study is to give an accurate description of the profile or characteristics of variables of interest in a situation. A descriptive study is different from an *exploratory study* in terms of the depth of the research since the latter is particularly useful if there is only limited knowledge or research available on the subject matter, issue or phenomenon of interest. Therefore, an exploratory study involves extensive preliminary works in order to build a comprehensive understanding on what is going on followed by rigorous analysis to explain and address the impending situation. A *hypothesis testing study* or *explanatory study* is mainly interested in explaining the interaction or causal relationships among differing variables in a situation that contribute to, or result in, a particular observed phenomenon or outcomes. On the other hand, a *case study* is a research approach that involves an "in-depth, contextual analyses of matters relating to similar situations in other organisations" (Sekaran, 2003: 125). This strategy is especially useful if a researcher intends to obtain greater insights and understanding of the context of a particular situation. To achieve this, a case study essentially requires the use of a specific data collection and analysis process called *triangulation* technique in which data is obtained from multiple sources using various data collection techniques to ensure that the data accurately reveals what the researcher thinks it reveals (Saunders *et al.*, 2007: 139).

A triangulation technique is defined by Denzin (1970: 297, cited in Collis and Hussey, 2003: 78) as "the combination of methodologies in the study of the same phenomenon". He argued that if several researchers studied the same phenomenon using various different methods but eventually arrived at similar conclusions, such results would have greater validity and reliability as compared to results obtained using a single

research method. There are four types of triangulation technique identified by Easterby-Smith, Thorpe and Lowe (1991, cited in Collis and Hussey, 2003: 78) namely *data triangulation, investigator triangulation, methodological triangulation* and *triangulation of theories*.

Based on the nature of the subject interest being investigated and the research process involved, this study can be categorised as a *case study* analysis with a combined research purpose of *descriptive*, *exploratory* and *analytical*. Taking Malaysia as the case study, this study attempts to determine the return and risk characteristics of both Islamic and conventional investment portfolios, and examines the actual practice of Islamic fund management, particularly the handling of Islamic funds, the impact of *Shariah*-compliance requirements on securities selection as well as operational costs, and the current valuation methods used by Islamic fund managers to measure Islamic fund performance. To enhance the robustness of the analysis, this study employs *data triangulation* and *methodological triangulation* techniques since two types of data will be collected at different times and from different sources namely time series data (historical stock prices) and primary data (semi-structured interviews) whilst two types of analyses will be undertaken to examine the data namely *quantitative* analysis and *qualitative* analysis, respectively. This chapter continues with the research strategy of this study in the following section.

5.4 RESEARCH STRATEGY

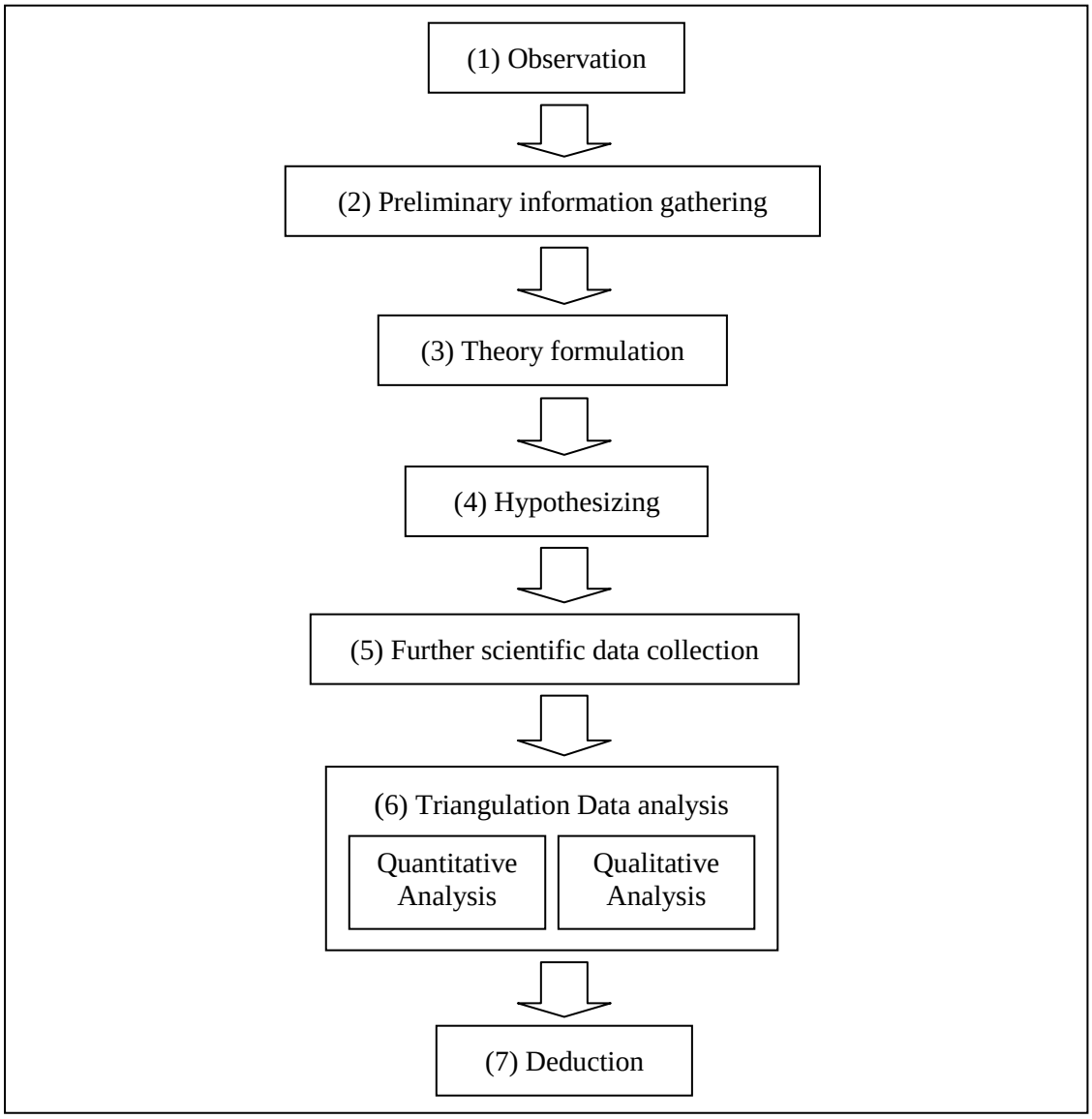
For a study that involves the use of a specific theory, there are two types of research strategy that can be employed either singly or collectively, namely *deductive* process and *inductive* process. Collis and Hussey (2003: 15) define deductive research as "a study in which a conceptual and theoretical structure is developed and then tested by empirical observation; thus particular instances are deduced from general inferences" whilst inductive research is defined as "a study in which theory is developed from observation of empirical reality; thus general inferences are induced from particular instances". Saunders *et al.* (2007: 117) provide a concise explanation on the basic processes involved in the two research strategies. They state that a deductive approach begins with a theory or hypothesis being developed first followed by designing a research strategy suitable for

testing the hypothesis, whilst an inductive approach requires data to be collected first and subsequently a theory or hypothesis is developed based upon the analysis on the data. Therefore, the main difference between the two approaches is basically on how a theory or hypothesis is arrived at and how the data is treated. Although a research strategy may be classified into the two philosophical approaches, the different classification has no significant meaning since neither approach can actually be considered as superior to the other. In this respect, Saunders *et al.* (2007: 117) wrote:

> Insofar as it is useful to attach these research approaches to the different research philosophies, deduction owes more to positivism and induction to interpretivism, although we believe that such labelling is potentially misleading and of no real practical value.

Therefore, the selection of either strategy is not mutually exclusive but depends on research questions or subject matter being investigated. In fact, as argued by Saunders *et al*. (2007), it would be more beneficial for a researcher to integrate both the deductive and inductive approaches within the same piece of research rather than to choose and adopt any single strategy rigidly due to the sophisticated and research methodological complexity of this study. Hence, this study intends to use both strategies by adopting the seven-step process known as *hypothetico-deductive* method explained in Sekaran (2003) as shown in Figure 5.2. It is rather clear from the figure that the method uses an inductive research approach at the early stage of the study to gain better understanding on the subject of interest but draws its conclusion by using a deductive approach at the end of the research process.

Figure 5.2: The *Hypothetico-Deductive* Method of this Study



Source: Adapted from Sekaran (2003: 29)

A brief explanation on how each of the seven steps in the *hypothetico-deductive* method is applied in this study is presented as follows:

5.4.1 Observation

As elaborated in the previous chapters, this study is stimulated by the tremendous growth of Islamic finance and banking industry in the global market, in general, and in Malaysia, in particular. One segment of the industry which has benefited largely from the increasing demand for Islamic-based financial products and services is the Islamic unit

trust or mutual fund. In addition to religious reasons, the growth of the Islamic fund industry is also encouraged by a greater awareness towards ethical or socially responsible investment. Despite the continuing investors' interest however, there is evidence from published data and empirical studies that return on Islamic funds is generally lower than conventional funds and the market index. The underperformance is argued to be caused by *Shariah* restrictions on securities selection that render Islamic portfolio to become sub-optimal, and hence, unable to outperform conventional portfolio or the market index. The other argument states that *Shariah*-compliance requirements brings an additional cost to Islamic funds, thus resulting in relatively lower return which makes it difficult for Islamic funds to outperform conventional funds. However, although there may be some credibility to the arguments, there are other reasons that may contribute to Islamic funds' underperformance such as fund managers' skills or misspecification error in the traditional portfolio performance valuation models used to evaluate Islamic funds. Since the standard models do not give due consideration to the disadvantages of Islamic funds, any valuation based on the traditional models may produce a biased result against Islamic funds. Therefore, on the back of this observation, the study was conceived with the purpose to examine the return and risk characteristics as well as the operations of Islamic funds in the hope that better understanding of the funds will pave the way for devising new assessment method for Islamic funds.

5.4.2 Preliminary Information Gathering

To provide a solid understanding on issues surrounding Islamic funds' performance, preliminary information related to the modern portfolio theory, relevant statistical data pertaining to Malaysian unit trust and stock market industry, and findings from previous empirical studies on the performance of conventional, ethical as well as Islamic funds was obtained. The bulk of the information came from literature reviews, statistical publications from various authorised sources such as the Bank Negara Malaysia (the Central Bank of Malaysia), the SC, the Federation of Investment Managers Malaysia (formerly known as Federation of Malaysian Unit Trust Managers), unit trust fund management companies as well as finance-related magazines and newspapers as has been explained in great detail in Chapter 2 to Chapter 4 previously. In general, previous findings of Islamic funds' performance have shown rather mixed results but studies undertaken in Malaysia indicate that such analysis is also sensitive to the benchmark used

as proxy for the market portfolio. In addition, past studies have conveniently employed the traditional risk-adjusted portfolio performance measures, namely the Sharpe Index, the Treynor Index and the Jensen-*alpha* Index, which are used widely in the valuation of conventional funds without giving due consideration to the disadvantages of Islamic funds caused by various *Shariah*-compliance requirements. In doing so, past studies have deliberately ignored the uniqueness of Islamic funds and the fact that Islamic funds would have different investment philosophies than conventional funds.

The information gathered indicates that there is a strong case that makes this study worth pursuing. Two reasons may be cited here: First, Islamic funds are clearly in a disadvantaged position when their performance is compared directly with conventional funds. Therefore, further study is needed to investigate the portfolio composition of Islamic funds which has a direct impact on the performance of the funds. Secondly, this study will contribute positively to the development of the Islamic fund industry particularly by enriching the body of knowledge of Islamic fund management and assessment technique. It is also interesting to investigate why past studies as well as Islamic fund managers continue to rely on the traditional portfolio valuation models to the extent that no alternative measurement model that could cater for the specific needs of Islamic funds have ever been developed or attempted.

5.4.3 Theory Formulation

All the preliminary information collected in the previous process is then integrated in logical manner in order to identify the critical factors or issues in Islamic funds' performance. In this study, the theoretical framework is derived based on the modern portfolio theory and the existing portfolio valuation methods to ensure that the methodologies used are in line with already established theory (this process is explained in Section 5.5.1 and Chapter 6 for the quantitative analysis method, and Section 5.5.2 for the qualitative analysis method). Therefore, this study will not be suggesting any new theory, but rather, will utilise the existing established methods of fund performance valuation while it explores how Islamic funds' assessment can be improved.

5.4.4 Hypothesizing

In this process, several hypotheses are generated to allow for statistical tests to be conducted in order to determine the robustness of the observed differences in the portfolios' performance and the relationship between Islamic-based portfolios with conventional portfolios and the market index. The hypotheses generated are designed to test the difference in the mean return of the portfolios, their risk level, their return correlation, and whether the performance of the portfolios exhibits the *firm size effect* anomaly.

5.4.5 Further Scientific Data Collection

At this stage, a *data triangulation technique* involving the collection of two types of data is used. Firstly, secondary data in the forms of historical stock prices and other related economic time series data were collected from the *Datastream* for the quantitative analysis method. The data is used to construct the hypothetical Islamic and conventional portfolios from which their return and risk characteristics are identified and their performance analysed. Secondly, primary data is collected through semi-structured interviews with Islamic fund managers in Malaysia to obtain inputs pertaining to the actual operation of Islamic funds and their perception towards several issues relating to Islamic funds' performance and valuation.

5.4.6 Data Analysis

A *methodological triangulation technique* is carried out involving two types of data analysis in this process namely quantitative analysis (for the secondary time series data) and qualitative analysis (for the primary data). The quantitative analysis (to be explained in Chapter 7) involves both the descriptive analysis and regression analysis on the hypothetical portfolios' performance. In addition, performance analysis using the traditional valuation models is also conducted to measure and rank the hypothetical portfolios' performance on a risk-adjusted basis. For the qualitative analysis (to be explained in Chapter 8), the primary data obtained from semi-structured interviews is analysed using both the *coding analysis* and *content analysis* methods. The coding analysis is used to analyse the interview transcripts whilst the content analysis is used to

analyse fund prospectuses, brochures, newsletters, magazines, newspapers and other relevant publications.

5.4.7 Deduction

This final step involves the interpretation of the meaning from results obtained from both the quantitative and qualitative data analyses to generate findings for the study. At this stage, the empirical results from the quantitative analysis are used to make inferences on the general return and risk characteristics of Islamic and conventional funds. Results from the qualitative analysis are used to determine the actual Islamic fund management practices particularly with regards to Islamic fund operation and performance valuation. All results obtained from the preliminary information, quantitative analysis and qualitative analysis are contextualised to allow an in-depth analysis of Islamic fund performance (this process is discussed in Chapter 9). Based on the inferences made, the study attempts to propose a practical way to further improve the assessment method of Islamic funds.

The seven-step process of *hypothetico-deductive* method described above has outlined the research strategy of this study. The next section elaborates the research method of this study in greater detail.

5.5 RESEARCH METHOD

This study employs the *methodological triangulation* technique of data analysis in which two different analysis methods are used to analyse the two different data sets collected. The two methods are *quantitative* analysis and *qualitative* analysis. Each method is discussed as follows.

5.5.1 The Quantitative Analysis Method

The main purpose of the quantitative analysis method is to determine the return and risk characteristics of Islamic funds and examine whether they are significantly different from

the return and risk characteristics of conventional funds. The other purpose of the quantitative analysis is to investigate the performance trend of Islamic funds in comparison to conventional funds. The research tool, modelling and data analysis techniques used in the quantitative analysis are discussed as follow.

5.5.1.1 Research Tool in Quantitative Analysis Method

The quantitative analysis is undertaken based on samples of three hypothetical portfolios specifically created for the purpose of this study. Three groups of hypothetical portfolios were constructed, namely Conventional Portfolios (CP), *Shariah*-approved Portfolios (SAP), and Non-*Shariah*-approved Portfolios (NSAP), respectively. For the purpose of this study, CP is regarded as the proxy for 'conventional' or 'unrestricted' funds since it invests in both *Shariah*-compliant and non-*Shariah*-compliant stocks, SAP represents Islamic funds as it contains only *Shariah*-compliant stocks whilst NSAP symbolises *haram* (forbidden) or 'sin' funds since it comprises entirely of non-*Shariah*-compliant stocks. The existing unit trust or mutual funds in Malaysia (including ethically-oriented funds) take the form of either CP or SAP but there is no funds equivalent to NSAP available in the Malaysian market as yet. Hypothetical portfolios or portfolio simulations have been used in past studies such as by Draper and Paudyal (1997), Cowell (2002), Yaacob and Yakob (2002) and Abd Karim and Kogid (2004). The use of hypothetical portfolios offers several important advantages as compared to using actual funds as follows:

(i) All unit trust funds currently available in the market have been established based upon specific investment philosophies or objectives and managed by fund/investment managers appointed by fund management companies. Therefore, there could be systematic bias in the observed performance of the actual unit trust funds since it will be difficult to ascertain whether any outperformance or underperformance of a fund was due to the fund's portfolio composition (provided, of course, that the securities in which the fund has invested in have been rightly chosen in line with the fund's stated investment objectives); or it may be attributed to the fund manager's superior investment and trading skills; or it may simply be due to the prevailing market condition as the fund is likely to perform favourably during a bullish stock market but perform badly during a

bearish stock market. The hypothetical portfolios on the other hand, are not affected by this type of systematic bias, and since the portfolios are not subject to any specific, pre-stated investment objectives, it will be more feasible to identify the general characteristics of Islamic and conventional funds accurately which is almost impossible to determine if using the actual unit trust funds.

(ii) Past studies based on actual unit trust funds have indicated that the performance of the actual funds is generally less encouraging. This is supported by casual observation on the market price of the actual unit trust funds which shows that the current NAV for the majority of the funds is below their original NAV at the time of their launching, unfortunately. Taken as a whole, this implies that any fund performance analysis made by using the actual unit trust funds may result in below-average performance which may create unnecessary prejudice to the future outcome of the study. The use of hypothetical portfolios however, will not suffer from such prejudice.

(iii) There are various types of unit trust funds for both conventional and Islamic funds available in the market. In addition, there are other complications resulting from cross relationship of funds such as one fund management company may have several funds launched under its umbrella or a situation in which a fund/investment manager is responsible for several unit trust funds belonging to different fund management companies albeit in a different proportion. Another tricky situation that needs to be dealt with if employing actual unit trust funds is possible differences in ownership structure as some funds belong to private fund management companies whilst others belong to government-backed fund management companies. The different ownership structures may have a direct impact on the funds' cost structure, investment philosophy or fund management strategy, and ultimately, the funds' return performance. For instance, casual observation indicates that, based on their current NAV, unit trust funds managed by private fund management companies performed better than unit trust funds managed by state-owned fund management companies. Such diversity makes it rather difficult to create a proper sampling in order to make meaningful comparison or to set a benchmark for a performance standard. Such complexities however, do not affect the hypothetical portfolios.

The quantitative analysis method begins with the collection of time series data comprising yearly historical stock prices of all Malaysian listed companies, the benchmark Kuala Lumpur Composite Index (KLCI), the FTSE Bursa Malaysia *Shariah* Index (FBMSHA), the Malaysian 12-months Treasury bills (T-bills) rates as proxy for risk-free rate investment instrument, and 12-months *mudharabah* investment account rates as proxy for Islamic risk-free investment instrument. The share prices and stock market indices were obtained from *Datastream* whilst the interest rates were sourced from Bank Negara Malaysia, the country's central bank. The *Shariah*-compliant stocks were then identified based on the list of *Shariah*-approved securities provided by the *Shariah* Advisory Council of the Securities Commission (SACSC) issued on the 28th of November 2008 consisting of 855 stocks or 87 per cent from the total of 980 securities listed on Bursa Malaysia Securities Berhad.

As mentioned previously, the three hypothetical portfolios used in this study namely CP, SAP and NSAP would represent conventional funds, Islamic funds, and 'sin' funds, respectively. The three different classifications of hypothetical portfolios are required to determine if any salient features exist in each of the portfolio's traits that influence their performance and to establish the cross relationship and performance ranking between the different types of portfolios. The hypothetical portfolios are constructed based on the following assumptions:

(i) The hypothetical portfolios invest only in a single type of asset, namely Malaysian listed companies' stocks and buy one unit of share of every listed company. Therefore, the hypothetical portfolios are essentially equity-based, price-weighted portfolios. Only one stock is held for every company throughout the period and no additional stock arising from rights issue, bonus issue, private placement or stock split for the same company is considered.

(ii) There is no limit on the size of investment of the hypothetical portfolios and the portfolios could buy any stock regardless of the price level. For a newly listed stock, it will be purchased in the subsequent year after it was listed and included immediately in the portfolio. For example, a company which is listed in 2005 will be purchased in 2006 and its first return is calculated based on the difference between the closing price in 2007 and the closing price in 2006. This will ensure

price stability and accurately reflect a holding period return for a full calendar year.

(iii) The hypothetical portfolios adopt the buy-and-hold policy, in which, the portfolios will continue to keep all stocks in their portfolio from the first year they were purchased until the end of the study period. The total holding or study period is 19 years from end-1989 to end-2008.

(iv) Return of the hypothetical portfolios is calculated on a year-to-year basis. The hypothetical portfolios generate their return either through capital appreciation or yearly share price difference. There is no other type of return including dividend income earned by the hypothetical portfolios. Trading is based on the simple buy and sells activities. No short selling, derivatives trading or hedging activities are allowed.

(v) A stock in which its listing status is subjected to a prolonged period of trading suspension or is revoked during a particular year will be withdrawn or excluded from the hypothetical portfolios beginning from the year its listing status is suspended or invalidated. However, the stock can be readmitted into the hypothetical portfolio in the following year after its listing status has been officially reinstated.

(vi) The *Shariah*-compliant status of each stock is determined based on the list of *Shariah*-approved securities issued by the SC's *Shariah* Advisory Council issued on the 28th of November 2008. *Shariah*-compliant securities are marked as 'H' whilst non-*Shariah*-compliant securities are denoted by 'N'.

For each of the three portfolio groupings, five sub-portfolios were created based on the size of their end-of-year market capitalisation. The portfolios are the All Stocks (comprising of all companies in the portfolio) as well as Portfolio 1 (comprising the largest size stocks) to Portfolio 4 (comprising the smallest size stocks). The classification based on the size of the market capitalisation is required to investigate the presence of the firm size effect which has been extensively documented in past studies pertaining to portfolio performance analysis. The range of the size of market capitalisation for each

sub-portfolio is determined based on the percentile method generated by SPSS. Table 5.1 summarises the time period and the number of securities in each portfolio.

Table 5.1: Summary of Time Period and the Number of the Portfolios' Component Stocks

Hypothetical Portfolios	All Period s.1990 – e.2008	Market Rally s.1990 – e.1997	Crisis Period s.1998 – e.2003	Post Crisis s.2004 – e.2008
CP				
- All Stocks	s.159 - e.890	s.159 - e.401	s.472 - e.631	s.688 - e.890
- Portfolio 1 (CP1)	s.39 - e.223	s.39 - e.94	s.118 - e.152	s.170 - e.223
- Portfolio 2 (CP2)	s.40 - e.219	s.40 - e.98	s.118 - e.156	s.168 - e.219
- Portfolio 3 (CP3)	s.40 - e.230	s.40 - e.99	s.118 - e.157	s.171 - e.230
- Portfolio 4 (CP4)	s.40 - e.218	s.40 - e.110	s.118 - e.166	s.179 - e.218
SAP				
- All Stocks	s.109 - e.770	s.109 - e.314	s.377 - e.525	s.579 - e.770
- Portfolio 1 (SAP1)	s.27 - e.192	s.27 - e.79	s.94 - e.127	s.141 - e.192
- Portfolio 2 (SAP2)	s.27 - e.188	s.27 - e.78	s.94 - e.128	s.142 - e.188
- Portfolio 3 (SAP3)	s.28 - e.200	s.28 - e.79	s.95 - e.130	s.144 - e.200
- Portfolio 4 (SAP4)	s.27 - e.190	s.27 - e.78	s.94 - e.140	s.152 - e.190
NSAP				
- All Stocks	s.50 - e.120	s.50 - e.87	s.95 - e.106	s.109 - e.120
- Portfolio 1 (NSAP1)	s.12 - e.30	s.12 - e.21	s.23 - e.25	s.26 - e.30
- Portfolio 2 (NSAP2)	s.12 - e.30	s.12 - e.22	s.24 - e.28	s.29 - e.30
- Portfolio 3 (NSAP3)	s.13 - e.30	s.13 - e.22	s.24 - e.27	s.27 - e.30
- Portfolio 4 (NSAP4)	s.13 - e.30	s.13 - e.22	s.24 - e.26	s.27 - e.30

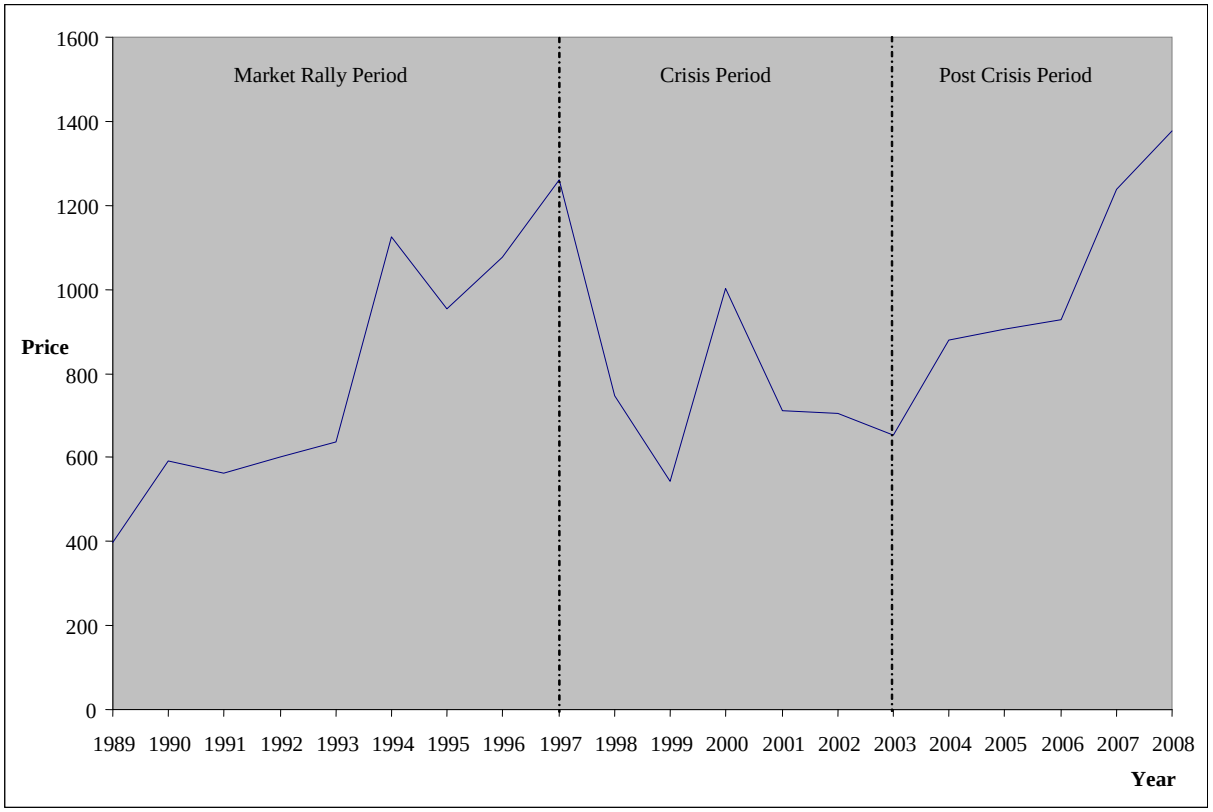
Note:
CP - Conventional Portfolio
SAP - *Shariah*-Approved Portfolio (SAP)
NSAP - Non-*Shariah*-Approved Portfolio
s - Starts of period
e - End of period

The yearly historical data used for this study covers a period as far back as end-December 1989 to end-December 2008. The extended period enables for a more thorough analysis on the performance of the hypothetical portfolios in relation to the continuous changing in business and economic cycles as well as fluctuation in the Malaysian stock market performance throughout the period under review. To properly investigate the impact of the broader economic performance, the study period is divided into four sub-periods namely All Period (1990 to 2008), Market Rally Period (1990 to 1997), Crisis Period (1998 to 2003) and Post Crisis Period (2004 to 2008). With exception of All Period which tracks the price performance of the stocks throughout the

study period, the cut-off-year for the other sub-periods is determined based on a major turning point in the KLCI performance which normally indicates the beginning or the ending of a specific trading trend. The KLCI's performance trend is shown in Figure 5.3 and Figure 5.4.

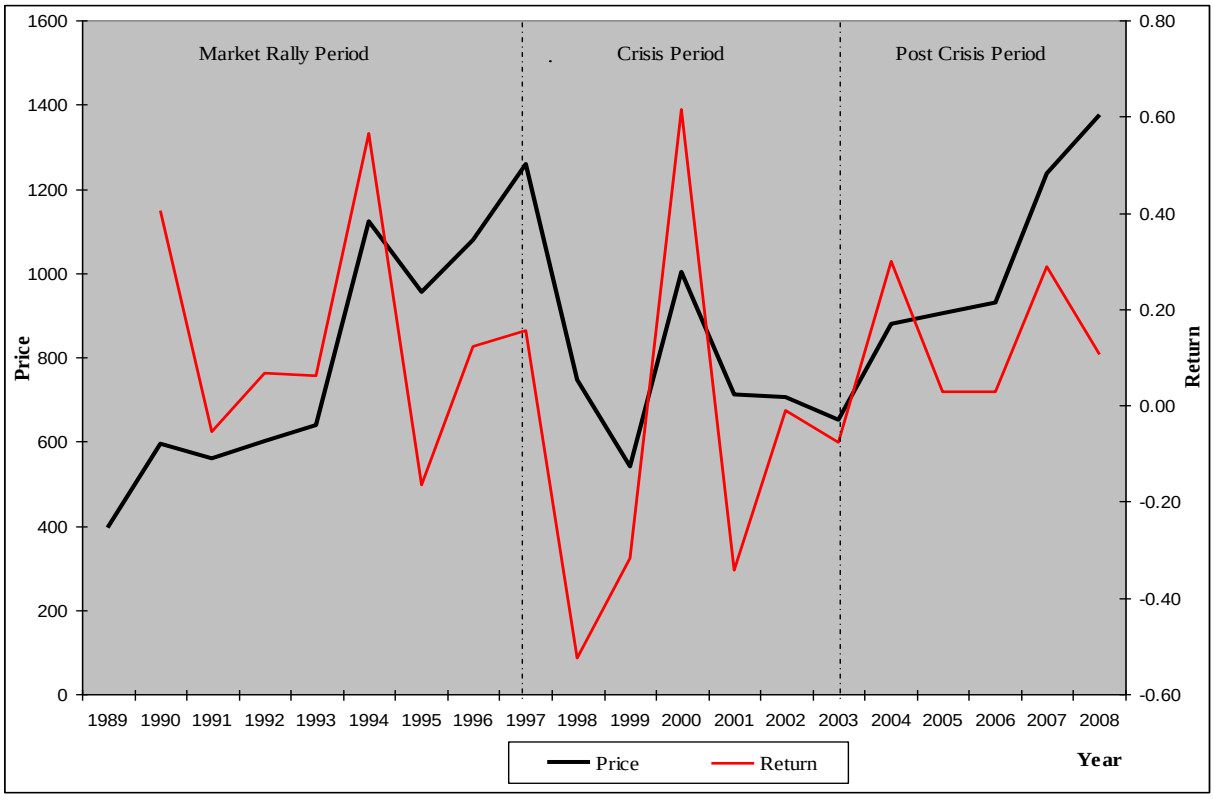
Figure 5.3 reveals that the KLCI moved in an upward trend albeit a volatile performance throughout 1989 to 2008 period. The sub-period classification was determined based on the significant turning point in the market trend. For the market rally period, the trend started in 1989 (the first collected data) and ended in 1997 following the sharp drop in share prices which was triggered by the Asian financial crisis. The crisis period occurred between 1998 to 2003 during which the performance was volatile amid poor market sentiment and intermittent technical corrections. The market staged an impressive rebound in 2003–2004 period which marked the start of the post-crisis period and continue to move in an upward trend until 2008 (the end of the study period). Figure 5.4 shows the benchmark's return performance superimposed on its price movement. The figure indicates that the KLCI's return exhibits a strong mean reversion trend throughout the period. Consistent with its volatile prices, return of the benchmark index swing wildly during the market rally and crisis periods. This is reflected from the huge fluctuation between the losses of 16.4 per cent to profits of 56.6 per cent in the market rally period, and between the losses of 52.5 per cent to gains of 61.5 per cent in the crisis period. During the post crisis period however, the return was between 2.7 per cent to 29.8 per cent levels which is deemed moderate as compared to the previous two sub-periods. This indicates that the KLCI's prices moved in a rather smaller price trading band during the post-crisis period which implies a positive but rather cautious stocks market sentiment.

Figure 5.3: KLCI Yearly Performance 1989 to 2008



Source: Datastream

Figure 5.4: KLCI Price and Return Performance 1989 to 2008



Source: Datastream

5.5.1.2 Data Analysis and Modelling of Quantitative Analysis Method

The data analysis can be categorised into two parts: (1) descriptive analysis which is undertaken to examine the portfolios' return and risk characteristics; and, (2) analysis of portfolio performance and ranking based on the traditional risk-adjusted portfolio valuation models. To investigate the statistical significance of the portfolios' return and risk, four types of hypothesis testing are conducted namely the test of mean difference (*t*-test), the correlation test, the test of firm size effect and the test of portfolio volatility (beta). The analysis of portfolio performance and ranking is based on the Sharpe Index, the Treynor Index and the Jensen-*alpha* Index. The empirical models used in the quantitative analysis are explained in Chapter 6.

The quantitative analysis starts with descriptive analysis of each of the hypothetical portfolios. The descriptive analysis can be used to identify the general return and risk characteristics of the hypothetical portfolios with a main objective to determine whether there is any significant difference between the return and risk of Islamic portfolios as compared to the return and risk of conventional portfolios. Briefly, this is achieved by testing the following groups of null hypotheses:

(i) Return of *Shariah*-Approved Portfolio (SAP) is not significantly different from return of Conventional Portfolio (CP) and Non-*Shariah*-Approved Portfolio (NSAP);

(ii) Return of *Shariah*-Approved Portfolio (SAP) is not correlated with return of Conventional Portfolio (CP) and Non-*Shariah*-Approved Portfolio (NSAP);

(iii) Return of large-capitalised stocks portfolio is not significantly different from return of small-capitalised stocks portfolio.

With regards to portfolio performance, this study employs the three standard portfolio performance measures namely the Sharpe Index, the Treynor Index and the Jensen-*alpha* Index as outlined in Chapter 6. For the purpose of calculating the Jensen-*alpha* Index, this study uses the FBMSHA as the proxy for Islamic market portfolios when evaluating Islamic portfolios (SAP) in view that the *Shariah* index is arguably a

better proxy for the universe of *halal*-approved (permissible) securities as compared to conventional index. The FBMSHA was launched on the 22nd of January 2007 and replaced the KL *Shariah* Index (KLSI) as the official *Shariah* index of Bursa Malaysia. Regression results obtained from the analysis are used to make inference on the performance of Islamic portfolios vis-à-vis conventional portfolios and to generate a portfolio ranking. The overall process involved in the quantitative analysis including the hypothesis testing, interpretation and analysis of the results is discussed in Chapter 7.

5.5.2 The Qualitative Analysis Method

The qualitative analysis attempts to explore the Islamic fund management operation and valuation practice. The analysis is primarily intended to complement the quantitative analysis by providing inputs from industry practitioners. For the current operation of Islamic funds, the qualitative analysis is particularly focused on the administration of Islamic funds, the structure and investment practice of the funds as well as the *Shariah* supervision and monitoring activities. With regards to Islamic fund performance and valuation, the qualitative analysis focuses on the securities selection, return performance, the impact of *Shariah*-compliance requirements and fund valuation techniques used by Islamic fund managers. Inputs obtained from industry practitioners especially those related to their actual handling and experience in managing Islamic funds are very valuable to this study as the inputs can be used to validate the findings from quantitative analysis. More importantly, some issues pertaining to Islamic fund operation such as the *Shariah*-related matters and fund valuation techniques cannot be explained by merely analysing the secondary data. Instead, such information can only be acquired by directly approaching Islamic fund managers, this is what the qualitative analysis of this study is designed for. By triangulating the findings from quantitative analysis, qualitative analysis and literature reviews, a comprehensive study pertaining to Islamic fund operation and performance offering credible conclusions can be accomplished.

5.5.2.1 Research Tool in Qualitative Analysis Method

This analysis uses semi-structured, face-to-face interview with Islamic fund managers in Malaysia as its research tool. By definition, an interview is "a purposeful discussion

between two or more people" (Kahn and Cannell, 1957) that "involves questioning or discussing issues with people" (Blaxter *et al.*, 2001). The face-to-face interview method is selected in favour of other research tools such as telephone interview, survey questionnaire, personal observation or internet survey due to the following reasons:

(i) Face-to-face interviews provide direct access with the main subject of this research namely the Islamic fund managers themselves;

(ii) Since the issue being investigated in this study *i.e.* Islamic fund management operation involves a broad and practical area, a more flexible format of questions or style of questioning is needed in order that the issue can be discussed more thoroughly with the respondents. This includes the ability to modify, alter or vary the interview questions immediately (during the interview session) or to post impromptu questions in order to adapt to the fund managers' responses. A survey using questionnaires, for example, is lacking this important flexibility;

(iii) The interview will allow the researcher to detect nonverbal cues by observing the body language of the respondents when they answer a particular question. The body language is crucial since it may contain implicit messages that may not be revealed verbally. Therefore, equal emphasis should be given to respondents' verbal answers and body language in order that any meaningful message conveyed through the body language may be revealed. This is to ensure that the respondents are replying to each of the interview questions clearly and honestly, thus minimising any potential errors when the message from the response is extracted and analysed later. Surveys using telephone interviews or internet, for example, are unable to detect body language; and

(iv) The interview will help to minimise potential errors resulting from misunderstanding or confusion as it allows the researcher to repeat, rephrase or elucidate an interview question whenever necessary in order to ensure that the respondents fully understand the question. This gives a significant advantage of interview over other modes of data gathering methods such as questionnaires or internet survey.

The interview process begins with the selection of all 23 fund management companies offering Islamic funds in Malaysia out of the total 31 fund management companies operating in the country as at 30th of June 2008. The list of the fund management companies is given in Appendix II. Considering that the population of Islamic fund managers is relatively known and geographically they are mainly concentrated in Kuala Lumpur, it is therefore possible to conduct face-to-face interviews involving the majority of the fund managers. Out of the 23 respondents identified and sent a letter inviting them to take part in the interview, eight agreed initially for an interview but only seven interviews were eventually conducted after one respondent withdrew at the very last minute before the interview was scheduled to start. This gives a success rate of 30 per cent which is deemed acceptable in view of the limited number of fund management companies willing to take part in the study. It is worth mentioning here that all the seven funds managers are Muslims hence there is potential bias in the outcomes of the interview analysis. Unfortunately, every attempt to obtain participation from non-Muslim fund managers was unsuccessful.

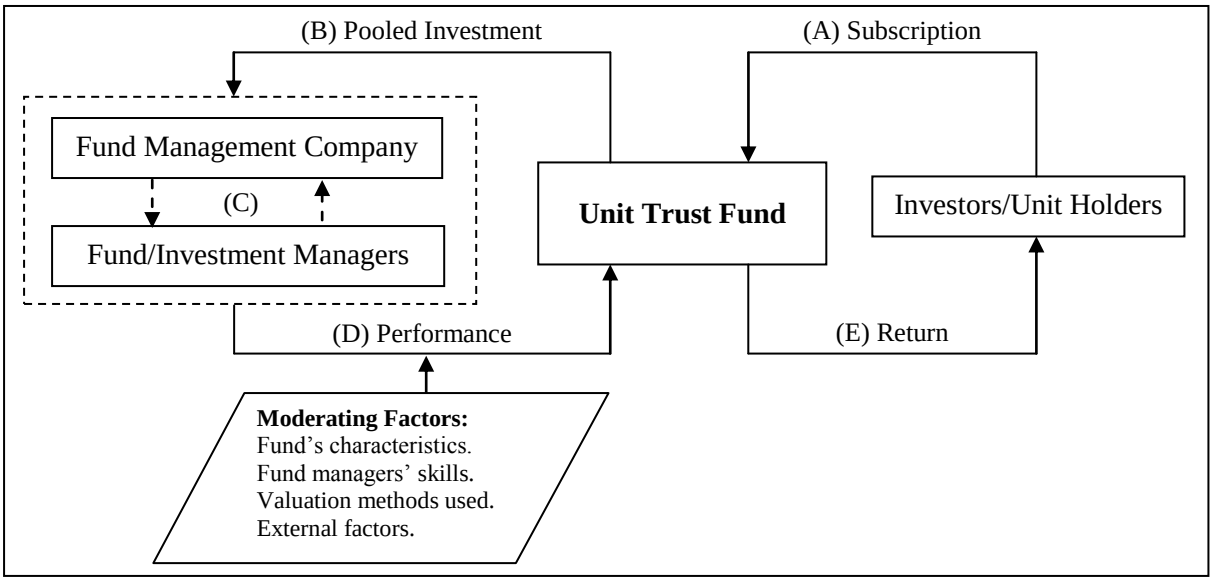
Prior to conducting the interview, respondents were reminded of the purpose of the interview and were given the assurance that information obtained from the interview would be treated as confidential and be used solely for the purpose of the study. In addition, the confidentiality terms were also stated in the invitation letter and again at the opening of the interview session where respondents were reminded of their right not to answer any questions in unlikely event that the question may have compromised their interest. Therefore, it is assumed that the willingness of respondents to take part in the interview signified their consent. Each interview session lasted between 45 to 90 minutes and the interview was recorded using a digital audio tape recorder to ensure that respondents' replies were fully recorded and to help minimise any possible loss of data during data transcription process. To safeguard the respondents' interest, the full transcript of the interviews was kept confidential and coded.

5.5.2.2 Data Analysis and Modelling in Qualitative Analysis Method

The design of the research model of the qualitative analysis is based on the analysis framework adapted from Sekaran (2003) which depicts the relationship between independent variables and dependent variables. Three types of variable categories have

been identified namely dependent variables, independent variables and moderating variables. The relationship between all the variables is illustrated in Figure 5.5 whilst a detailed explanation is given in Chapter 8.

Figure 5.5: Typical Relationship Structure in Fund Management Industry



Source: Adapted from Sekaran (2003: 92)

Figure 5.5 suggests that Islamic funds' performance and valuation techniques are dependent variables, for which, the outcomes are subject to Islamic fund managers' skills as the independent variables. During the process however, the eventual performance of Islamic funds and the selection of the fund valuation techniques is influenced by several factors inherent in the individual fund's characteristics (such as its investment objectives, types and structure), the fund manager's traits (including their experience, skills, education background and decision making process), the readily available performance measurement techniques and some other external factors (such as the impact of business and economic cycles, political stability and changes in government regulations). Therefore, the qualitative analysis attempts to investigate some important issues related to the creation and structure of the existing Islamic funds, to tripartite contract between unit holders–fund management companies–fund/investment managers, the handling and management of Islamic funds especially with regards to *Shariah*-related matters and the role of the *Shariah* advisory board, factors affecting the performance of Islamic funds particularly the impact of *Shariah*-compliance requirements and comparison between the

performance of Islamic funds against conventional funds as well as the performance valuation techniques used by Islamic fund managers.

Since this study uses a semi-structured interview approach, a set of questions was prepared to stimulate discussion and to ensure that the interview process would collect all information required and would not go astray. A sample of the interview questions is shown in Appendix III. In brief, the respondents were asked specific questions revolving around the following issues:

(i) The corporate structure of their fund management company, their investment products especially unit trust or mutual funds and the pool of their investment personnel entrusted to manage the funds;

(ii) The characteristics and operation of their Islamic funds including the securities selection approach, investment strategy and the use of derivative financial instruments such as options and futures contract;

(iii) Their perception towards the impact of *Shariah*-compliance requirements on Islamic funds' operations and performance as well as their investment decision making process;

(iv) The performance of their Islamic funds against the performance of other conventional unit trust funds (if any) under their management, and their level of satisfaction over the performance of their Islamic unit trust funds after taking into consideration the restrictions imposed by the *Shariah*-compliance requirements;

(v) The valuation methods of their Islamic funds' performance and their perception of the compatibility of the traditional portfolio performance measures for evaluating Islamic funds; and

(vi) Their opinion on whether their Islamic funds require an alternative valuation model which is distinctively different from the traditional portfolio models and will supposedly produce an unbiased and accurate measure of performance for Islamic funds.

The qualitative data in the forms of interview transcripts or observation notes obtained from the interviews were analysed using the coding analysis based on the template analysis method. Saunders *et al.* (2007) provide a brief explanation on the steps involved in template analysis. Under this approach, the original data is transcribed into written format which is then categorised and coded for analysis to identify and explore themes, patterns and relationships. The template approach allows categories and codes to be arranged hierarchically in order of their importance to help in the analytical process. The key themes or topics that made up the main interview questions are given the higher-order codes (written in upper case) whilst subsidiary questions which indicate the depth of the analysis are given lower-order codes (shown in lower case and italic script). One of the main advantages of this method is its flexibility whereby all the codes in the template hierarchy would be subjected to further revision or modification, if necessary, as the analysis progresses until all the data have been coded and analysed carefully. According to King (2004, cited in Saunders, Lewis and Thornhill, 2007: 497) a template may be revised or altered to facilitate for insertion of a new code not previously identified; to delete an existing code that is not needed; to change the scope of a code; or to reclassify a code into a different category. The other step involved in this analysis is unitising data which is essentially a verification process to justify for any template modification and to examine its implications towards the previous coding activity. The method utilises both deductive and inductive approaches to qualitative analysis since the method requires 'codes' to be determined prior to the analysis which will then be revised or amended as data are being collected and analysed.

Template analysis is chosen for this study since the method has the following advantages over the other qualitative data analysis techniques:

(i) As compared to a more rigid method such as *repertory grid technique* or *grounded theory* approach, template analysis offers more flexibility in the sense that the

coding units can be modified or altered, whenever necessary, as the analysis progresses. This will help ensure that no data will be discarded and every aspect of newly observed phenomena or new issues discovered during the data analysis will be treated appropriately. Hence, the findings deduced from this analysis would have high reliability and validity;

(ii) Considering the time constraint and budget limitation of this study, template analysis is arguably a convenient and straightforward analysis technique since it does not necessarily require the use of computer aided qualitative data analysis software (CAQDAS) (which is needed particularly when using the *cognitive mapping* method), or the use of complicated drawings or matrices (such as when using the *data display and analysis* approach), or require an extensive data collection before the data analysis can be carried out (as in the case of *analytic induction* method); and

(iii) Since semi-structured interviews are expected to generate a huge amount of verbal transcripts, the analysis method chosen to analyse data from the interviews must be able to deal with the non-standardised or complex responses contained in the verbal transcripts. In this respect, a template analysis method is preferred to a *content analysis* approach as the latter is more suitable for analysis involving public documents, meeting minutes, reports and other forms of archival data.

The overall process involved in the qualitative analysis including the coding procedure, interpretation and analysis of the results is discussed in Chapter 8.

5.6 CONCLUDING REMARKS

To summarise, this chapter explains the research methodology used in this study. Based on the nature of the subject of interest being investigated and the research processes involved, this study can be categorised as a *case study analysis* with combined research purposes of both the *descriptive* and *exploratory*. The research strategy used in this study combined both the *deductive* and *inductive* approaches through a seven-step process known as the *hypothetico-deductive method*. This study employs a *data triangulation*

technique in which two types of data are collected at different times and from different sources namely secondary time series data (historical stock prices and other economic data) and primary data (obtained from semi-structured interview). Due to the availability of two different types of data, the data analysis is undertaken using a *methodological triangulation technique* whereby the secondary data is analysed using *quantitative analysis* whilst the primary data is analysed using *qualitative analysis*.

The quantitative analysis is undertaken based on samples of three hypothetical portfolios comprising entirely of Malaysian listed companies' stocks. The analysis attempts to determine the distinguishing features in return and risk characteristics of Islamic funds that make them significantly different from their conventional counterparts. The method is also used to investigate the performance of Islamic funds as compared to conventional funds by using the traditional portfolio performance measures namely the Sharpe Index, the Treynor Index and the Jensen-*alpha* Index. The qualitative analysis is undertaken to complement the quantitative analysis in order to gain greater insight into the issues pertaining to Islamic funds handling by fund management companies. The analysis attempts to explore the actual operation of Islamic funds especially with regards to *Shariah*-compliance requirements and examines the existing Islamic funds' performance. Also, of a particular interest to this study is how the Islamic funds' performance and valuation are influenced by other factors such as fund characteristics, fund managers' capabilities and other external factors beyond the control of the Islamic fund managers. The analysis employed semi-structured, face-to-face interviews with a sample of seven respondents comprising Islamic fund/investment managers and the data was analysed using the coding analysis of the template analysis method.

The results obtained from both the quantitative and qualitative analyses are used for making inferences on the general characteristics of Islamic funds and the current fund valuation techniques used by fund managers. Subsequently, the inferences are used in the deduction process to determine whether Islamic funds require an alternative portfolio valuation model which is distinctly different from the existing risk-adjusted traditional portfolio valuation models. At the very least, the study intends to propose a practical approach to improve the assessment of Islamic funds. Hence, it is expected that this study will contribute positively to the development of the Islamic fund industry. The next chapter elaborates the empirical modelling used in this study.

Chapter 6

EMPIRICAL MODELLING IN THE ANALYSIS OF THE HYPOTHETICAL PORTFOLIOS' PERFORMANCE

6.1 INTRODUCTION

This chapter elaborates the empirical modelling used in the quantitative analysis of the hypothetical portfolios' performance. The primary aims of the quantitative analysis are to thoroughly examine the return and risk characteristics of the hypothetical portfolios and to measure their performance. The analysis intends to identify the distinguishing features in the return and risk characteristics between Islamic portfolios and conventional portfolios and makes a comparative performance between returns of the two types of portfolio.

The chapter is organised as follows. The research hypotheses and the statistical method used to test the hypotheses are explained in the next section. The section starts with the explanation of the methodologies used in the descriptive analysis particularly the methods of calculating the portfolios' return and risk followed by correlation test, the analysis of the firm size effect, the portfolio volatility analysis and the portfolio performance valuation analysis. The chapter then ends with a conclusion.

6.2 RESEARCH HYPOTHESES AND METHODOLOGY

This section explains the research hypotheses and methodology used to test the hypotheses. The descriptive analysis starts with the basic calculations of the return and risk of individual assets and the hypothetical portfolios. From the outcomes of the descriptive analysis, further analysis can be carried out to achieve the first objective of the study.

6.2.1 Analysis of the Hypothetical Portfolios' Return and Risk

The hypothetical portfolios' return and risk characteristics are determined from the descriptive analysis which examines their return and risk levels, their return correlation and their beta. The method of calculating the return and risk of individual stock is explained in virtually all finance and investment related textbooks such as Fabozzi (1999), Haugen (2001), Elton *et al.* (2003), Strong (2003), Levy and Post (2005), Reilly and Brown (2006), and Bodie *et al*. (2008). For the purpose of this study, the individual stock's return in the hypothetical portfolios is calculated as follows:

$$R_{it} = ln\, P_{it} - ln\, P_{it-1} \qquad (6.1)$$

where R_{it} is the return of stock *i* at time *t*. The risk of an individual stock is computed based on its variance and standard deviation. The variance is essentially the measure of dispersion of the actual value (price) around the mean, or average, value. The variance is estimated as follows:

$$\sigma_i^2 = \sum_{i=1}^{n} P_i[x_i - \bar{x}_i]^2 \qquad (6.2)$$

where σ_i^2 is the variance of the stock *i*, P_i is the probability of the return, and $\bar{x}_i$ is the mean return of the stock *i*. If all possible outcomes are equally likely, Equation 6.2 can be rewritten as:

$$\sigma_i^2 = \frac{1}{n}\sum_{i=1}^{n}[x_i - \bar{x}_i]^2 \qquad (6.3)$$

where *n* is the number of observation or the sample size. The standard deviation of the individual stock is the square root of the variance as follows:

$$\sigma_i = \sqrt{\sigma_i^2} \qquad (6.4)$$

Another proxy for risk is the beta which measure the risk of an asset relative to that of the market portfolio (Levy and Post, 2005: 882). Specifically, beta is defined as "a

standardized measure of systematic risk based upon an asset's covariance with the market portfolio" (Reilly and Brown, 2006: 1133) which can be calculated as follows:

$$\beta_i = \frac{Cov(\tilde{R}_i, \tilde{R}_m)}{\sigma_m^2} \quad (6.5)$$

where β_i is the beta of the asset *i*, $\tilde{R}_i$ is the return on asset *i*, $\tilde{R}_m$ is the return on the market portfolio, and σ_m^2 is the variance of the market returns. The covariance of the returns between two assets, *i* and *j*, is computed as follows:

$$Cov_{ij} = E\left[(R_i - \bar{R}_i)(R_j - \bar{R}_j)\right] \quad (6.6)$$

Under the CAPM theory, the beta of an individual asset can be estimated from the security market line (SML) of the single index model as follows:[14]

$$R_{it} = \alpha_i + \beta_i(R_{mt}) + u_{it} \quad (6.7)$$

where R_{it} is the return on the asset *i* in time *t*, α_i is an intercept term, β_i is the beta for the asset *i*, R_{mt} is the return of the market portfolio at time *t*, and u_{it} is the error term.

Having calculated the return and risk of individual assets, the analysis proceeded with the calculation of the return and risk of the hypothetical portfolios. Returns of the hypothetical portfolios were computed based on the weighted average of the returns of their component stocks as follows:

$$R_p = \sum_{i=1}^{n} w_i R_i = w_1 R_1 + \ ... \ + w_n R_n \quad (6.8)$$

where R_p is the portfolio return, w_i is the weighted average of the asset *i* in the portfolio, and R_i is the return on the asset *i*. The total portfolio weights must add up to one, or 100 per cent:

$$\sum_{i=1}^{n} w_i = w_1 + ... + w_n = 1 \quad (6.9)$$

[14] For reference, see Strong (2003:161) and Reilly and Brown (2006: 244)

Unlike the portfolio return which can be calculated based on the return contribution of the individual assets in the portfolio, the calculation of portfolio variance is not straightforward. Instead, the portfolio variance is calculated based on the weighted average of the individual asset's variance and the correlation between the returns of all assets in the portfolio. The variance for an *n*-security portfolio can be estimated as follows:[15]

$$\sigma_p^2 = \sum_{i=1}^{n} \sum_{j=1}^{n} w_i w_j \rho_{ij} \sigma_i \sigma_j \qquad (6.10)$$

where σ_p^2 is the portfolio variance, $w_i w_j$ is the portfolio weight for each of the assets *i* and *j*, ρ_{ij} is the correlation coefficient (to be explained in Section 6.2.3) between asset *i* and asset *j*, and $\sigma_i \sigma_j$ is the standard deviation of the assets *i* and *j*, respectively. The portfolio standard deviation therefore, is computed as follows:

$$\sigma_p = \sqrt{\sigma_p^2} \qquad (6.11)$$

However, for the purpose of this study, the portfolio risk is estimated based on the beta of the hypothetical portfolios. This method is chosen because of its practicality and simplicity as compared to the method proposed by the Markowitz (1952) model which calculates portfolio beta based on the covariance matrix containing the pair-wise comparison of all stocks in a portfolio as in Equation 6.10. For instance, to calculate the beta for the hypothetical portfolio CP which has a total of 890 stocks in 2008 will require the computation of 395,605 pair-wise covariances to estimate the portfolio variance for that year alone![16] Due to the limited resources, such voluminous calculation is not practical for this study as it may easily expose the study to error in the process of calculating all the hypothetical portfolios' beta. Alternatively, Strong (2003: 134), Levy and Post (2005: 246), Reilly and Brown (2006: 219), and Bodie *et al*. (2008: 320) suggest that portfolio beta can be estimated using the single index model as per Equation 6.7 since by comparing all securities in the portfolio to a similar benchmark value, the single index model could provide an indication of how the securities in the portfolio would behave relative to each other. As a result, to calculate the portfolio beta for CP requires only 890

[15] See Strong (2003: 128-131)
[16] The estimated number of pair-wise covariances needed is calculated by: $(n^2 - n)/2$

betas against 395,605 pair-wise covariances needed if using the Markowitz model. Under this approach, the portfolio beta is computed based on the weighted average of the component betas as follows:

$$\beta_p = \sum_{i=1}^{n} x_i \beta_i \quad (6.12)$$

6.2.2 Analysis of the Difference in the Portfolios' Mean Return

The purpose of the analysis is to determine whether the difference in the mean return of the hypothetical portfolios is statistically significant. The test is conducted using the paired sample *t*-test which compares mean returns of two portfolios. The procedure of performing the paired sample *t*-test involving two assets *X* and *Y* is as follows:[17]

$$\bar{X} = \sum_{i=1}^{N} w_i X_i / W \quad (6.13a)$$

$$\bar{Y} = \sum_{i=1}^{N} w_i Y_i / W \quad (6.13b)$$

where $\bar{X}$ is the mean value for X and $\bar{Y}$ is the mean value for Y, w_i is the weight for case *i*, and *W* is the sum of the weights. The difference, *D*, between the two means is:

$$D = \bar{X} - \bar{Y} \quad (6.14)$$

The standard error, S_D, of the difference is:

$$S_D = \sqrt{(S_X^2 + S_Y^2 - 2S_{XY})/W} \quad (6.15)$$

where S_X^2 and S_Y^2 are the variances of asset X and Y whilst S_{XY} is the covariance between asset X and Y. The *t*-statistics for equality of means is calculated as follows:

$$t = D/S_D \quad (6.16)$$

[17] Blalock (2006; cited in *SPSS 15.0 Algorithms*, pg. 677)

with (*W*-1) degrees of freedom and two-tailed significance level is used. The analysis of the difference in the hypothetical portfolios' mean return involved the testing of the following null hypotheses:

H_{o1} : The mean return of the *Shariah*-Approved Portfolio (SAP) is not significantly different from the mean return of the Conventional Portfolio (CP).

H_{o2} : The mean return of the *Shariah*-Approved Portfolio (SAP) is not significantly different from the mean return of the Non-*Shariah*-Approved Portfolio (NSAP).

H_{o3} : The mean return of the Conventional Portfolio (CP) is not significantly different from the mean return of the Non-*Shariah*-Approved Portfolio (NSAP).

The paired sample *t*-tests are conducted for all portfolio sizes and sub-periods to see whether the observed difference in return performance based on the different portfolio sizes and sub-periods is statistically significant, or otherwise.

6.2.3 Analysis of the Hypothetical Portfolios' Return Correlation

The purpose of the correlation analysis is to determine the relationship between returns of two assets or portfolios (*i* and *j*). The correlation value is obtained by calculating the covariance of the two assets based on Equation 6.6 as follows:

$$Cov_{ij} = E\left[(R_i - \bar{R}_i)(R_j - \bar{R}_j)\right] \tag{6.17}$$

Subsequently, the correlation coefficient, ρ, between the assets *i* and *j* can be estimated as follows:[18]

$$\rho_{ij} = \frac{Cov_{ij}}{\sigma_i \sigma_j} \tag{6.18}$$

[18] For reference, see Strong (2003:49) and Reilly and Brown (2006: 207-209)

The correlation coefficient take a value between −1 (perfect negative correlation) and +1 (perfect positive correlation). A +1 correlation coefficient implies that returns of the two assets are moving in the same linear direction whilst a −1 correlation signifies that returns of the two assets are moving in opposite directions meaning that when the return of one asset is higher than its mean, the return of the other asset will be lower than its mean albeit in comparable amount. A zero correlation value indicates no correlation between returns of the two variables.

To determine the relationship between the hypothetical portfolio groups particularly on how one portfolio influence the performance of the other portfolios, correlation tests are conducted based on the following null hypotheses:

H_{o4} : Return of the *Shariah*-Approved Portfolio (SAP) is not correlated with return of the Conventional Portfolio (CP).

H_{o5} : Return of the *Shariah*-Approved Portfolio (SAP) is not correlated with return of the Non-*Shariah*-Approved Portfolio (NSAP).

H_{o6} : Return of the Conventional Portfolio (CP) is not correlated with return of the Non-*Shariah*-Approved Portfolio (NSAP).

H_{o7} : Return of the *Shariah*-Approved Portfolio (SAP) is not correlated with return of the KLCI (KLCI).

The correlation analysis is also conducted for different portfolio sizes and sub-periods to examine the impact of the different portfolio sizes and market conditions on the hypothetical portfolios' return correlation. For comparison purposes, correlation analysis using the *Shariah*-compliant stock market index (FBMSHA) is also conducted to examine the relationship between the *Shariah*-compliant index and the hypothetical portfolios as well as the benchmark KLCI by testing the following null hypotheses:

H_{o8} : Return of the FBMSHA is not correlated with return of the Conventional Portfolio (CP).

H_{09} : Return of the FBMSHA is not correlated with return of the *Shariah*-Approved Portfolio (SAP).

H_{09} : Return of the FBMSHA is not correlated with return of the Non-*Shariah*-Approved Portfolio (NSAP).

H_{010} : Return of the FBMSHA is not correlated with return of the KLCI.

6.2.4 Analysis of the Impact of Different Portfolio Sizes on the Hypothetical Portfolios' Return

The primary aim of this analysis is to examine whether the Islamic-based portfolio, in particular, exhibits the firm size effect, or otherwise. The presence of the firm size effect, in which return of a portfolio is influenced by the size of the market capitalisation of its component stocks, in ethical-based portfolio has been reported by Luther and Matatko (1994), Sparkes (1995), Gregory *et al*. (1997), Wilson (1997) and Scholtens (2005) based on their findings that ethical funds generally have a high concentration of investment in small-capitalised stocks. For the purpose of the study, all stocks in each of the hypothetical portfolios are grouped into four categories based on the size of their market capitalisation with Portfolio 1 representing stocks with the largest market capitalisation whilst Portfolio 4 comprises of stocks with the smallest market capitalisation. The analysis of the firm size effect is carried out using ordinary least square (OLS) regression model incorporating dummy variables as well as by regressing the hypothetical portfolios' return directly with the return from each category of market capitalisation in the portfolios. Since the analysis involves time series data, the data were tested for their stationarity using the ADF unit root test prior to running the OLS regression.

6.2.4.1 The ADF Unit Root Test

The stationarity or unit root test is conducted using the Augmented Dickey Fuller (ADF) unit root test. According to Pesaran and Pesaran (1997: 53, 212), *Microfit* computes two types of ADF test statistics each with and without a time trend. For a model with no trends, the ADF test statistic is computed as the *t*-ratio of ρ in the ADF(ρ) regression as follows:

$$\Delta X_t = a_0(1-\rho) - \rho X_{t-1} + \sum_{i=1}^{p} \gamma_i \Delta X_{t-i} + u_t \qquad (6.19a)$$

where $\Delta X_t = X_t - X_{t-1}$, and ρ is the order of augmentation of the test. For a model with a trend, the *p*th order ADF test statistic is given by the *t*-ratio of ρ in the ADF regression:

$$\Delta X_t = a_0 + (1-\rho)a_1 T_t - \rho X_{t-1} + \sum_{i=1}^{p} \gamma_i \Delta X_{t-i} + u_t \qquad (6.19b)$$

where T_t is a linear time trend. The null hypothesis of the test states that H_0: $\rho = 1$ i.e. the time series has unit root (or, is nonstationary) against the alternative hypothesis of H_1: $\rho < 1$ i.e. the time series has no unit root (or, is stationary).

6.2.4.2 Analysis of the Firm Size Effect

The analysis of the firm size effect is undertaken based on the studies of stock market anomalies such as by Banz (1981), Draper and Paudyal (1997), and Abd Karim and Kogid (2004) as well as procedures of OLS regression analysis using dummy variables as explained by Gujarati (1999), Seddighi *et al.* (2000) and Asteriou and Hall (2007). For the purpose of this study, the firm size effect is initially analysed using OLS regression model incorporating dummy variables as follows:

$$R_{it} = \beta_1 + \beta_2 D_{2it} + \beta_3 D_{3it} + \beta_4 D_{4it} + u_{it} \qquad (6.20)$$

where R_{it} is the return of portfolio i at time t whilst the dummy variables take the following values:

$D_1 =$ {1 if the return at time *t* corresponds to the largest size stocks only; 0 otherwise

$D_2 =$ {1 if the return at time *t* corresponds to the medium size stocks only; 0 otherwise

$D_3 =$ {1 if the return at time *t* corresponds to the small size stocks only; 0 otherwise

$D_4 =$ {1 if the return at time *t* corresponds to the smallest size stocks only; 0 otherwise

The intercept term, β_1, represents the mean return for the large capitalised stocks while the coefficient β_2, β_3, and β_4 of the dummy variables represents the difference between return of the large capitalised stocks portfolio with return of the medium, small and smallest- capitalised stocks portfolios, respectively. The null hypothesis assumes that all dummy variable coefficients are equal to zero. Equation 6.20 indicates that not all four dummy variables are used in the regression. This is to avoid the *dummy variable trap* which is a multicollinearity condition created by an exact linear relationship between the dummy variables and the constant β_1 when all four dummy variables are used in the regression since $D_1 + D_2 + D_3 + D_4$ will always equal 1. Therefore, the number of dummy variables used should always be one less than the total number of possible categories.[19] In this case, only three categories of portfolio size will be used at any one regression. A positive dummy coefficient indicates that the respective portfolio has higher mean return than the large capitalised portfolio whilst a negative dummy coefficient implies that the respective portfolio has lower mean return than the large capitalised portfolio. Hence, a negative dummy coefficient would provide evidence of size effect favouring large capitalised stocks.

The size effect is further analysed by directly regressing the hypothetical portfolios' return with return from different categories of equity size in the portfolios as follows:

$$R_{it} = \beta_1 + \beta_2 X_{Largest2it} + \beta_3 X_{Medium3it} + \beta_4 X_{Small4it} + \beta_5 X_{Smallest5it} + u_{it} \quad (6.21)$$

where β_2, β_3, β_4 and β_5 represent the coefficient of return of the largest, medium, small and smallest size stocks, respectively. Equation 6.21 will reveal the direct relationship between the total portfolios' return with return from their each categories of equity size.

6.2.5 Analysis of the Hypothetical Portfolios' Return Volatility

The main objective of this analysis is to investigate the level of return volatility of the hypothetical portfolios, especially the Islamic-based portfolio. The analysis will give

[19] See Asteriou and Hall (2007: 193)

indication of the return volatility of Islamic-based portfolio relative to conventional portfolio. For the purpose of this study, the return volatility of the hypothetical portfolios is measured by their beta calculated based on the single index regression model as per Equation 6.7. Taking the KLCI as proxy for the market return, the equation is rewritten as follows:[20]

$$R_{it} = \beta_1 + \beta_2 KLCI_{2it} + u_{it} \quad (6.22)$$

where the coefficient β_2 represents the portfolio's beta relative to the market portfolio represented by the benchmark KLCI. Since beta signifies the portfolio's volatility against the overall market, the beta is assumed to be influenced by the overall market condition hence different beta is expected for different market condition.

6.2.6 Analysis of the Hypothetical Portfolios' Risk-Adjusted Return Performance

The purpose of this analysis is to examine the risk-adjusted return performance of the Islamic-based portfolio against the conventional portfolio. This is achieved by measuring the hypothetical portfolios' performance using the traditional portfolio valuation models namely the Sharpe Index, the Treynor Index and the Jensen-*alpha* Index. These models are chosen because the theories underlying the models have been well established whilst the models themselves have been subjected to rigorous empirical tests in the past. The Sharpe Index and the Treynor Index are arguably the most popular risk-adjusted return valuation models amongst both practitioners and academics alike due to the simplicity of the models while the popularity of the Jensen-*alpha* Index is attributed to its direct application from the CAPM equilibrium. The traditional portfolio performance measures have been used in past studies on ethical fund performance such as by Sauer (1997), Mallin *et al*. (1995), Bello (2005), Kreander *et al.* (2005), Chong *et al*. (2006), Statman (2006) and Schröder (2007) as well as on Islamic fund performance such as by Yaacob and Yakob (2002), Shah Zaidi *et al*. (2004), Hussein and Omran (2005), and Abdullah *et al*. (2007). Therefore, by using the same analytical approach, the results of this study can

[20] See Strong (2003: 134), Levy and Post (2005: 246), Reilly and Brown (2006: 219) and Bodie *et al.* (2008: 320)

be compared with the findings of similar studies undertaken in the past in a more meaningful fashion.

6.2.6.1 The Sharpe Index

Sharpe (1966) measures a portfolio's equity risk premium per unit of total risk as follows:

$$S_i = \frac{R_i - R_f}{\sigma_i} \quad (6.23)$$

where R_i is the return of the portfolio, R_f is the risk free rate return as represented by the Malaysian T-Bills or the *mudarabah* investment rate for *Shariah*-compliant instrument, and σ_i is the portfolio's standard deviation or total risk. For a benchmark, the Sharpe Index uses a capital market line (CML) which is a straight line connecting a risk free rate instrument with the market portfolio (represented by the index). If the CAPM theory holds, the CML will represent the set of all efficient portfolios. Hence, a portfolio which lies above the CML is considered to outperform the market whilst a portfolio that lies below the CML is deemed to underperform the market. The index is a pure value and a higher Sharpe Index is preferred over a lower Sharpe Index.

6.2.6.2 The Treynor Index

Treynor (1965) developed a portfolio performance measure which is similar to the Sharpe Index but uses the systematic risk or beta, β_i, of the portfolio as the denominator instead of standard deviation. The index measures a portfolio's equity risk premium per unit of systematic risk as follows:

$$T_i = \frac{R_i - R_f}{\beta_i} \quad (6.24)$$

where R_i is the return of the portfolio, R_f is the risk free rate return as represented by the Malaysian T-Bills or the *mudarabah* investment rate for *Shariah*-compliant instrument,

and β_i is the portfolio's beta or systematic risk. For a benchmark, the Treynor Index uses a security market line (SML) which is a straight line connecting a risk free rate instrument with the market portfolio (represented by the index). The CAPM states that the SML represents a linear relationship between the expected return of a portfolio and its beta. If the CAPM theory holds, the SML will represent the set of all efficient portfolios. Hence, a portfolio which lies above the SML is considered to outperform the market whilst a portfolio that lies below the SML is deemed to underperform the market. The index is given in percentages and a higher Treynor Index is preferred over a lower Treynor Index.

6.2.6.3 The Jensen-*Alpha* Index

While the Sharpe Index and the Treynor Index can be used to rank a group of portfolios based on their historical performance, neither of the two measures however, is able to provide an indication of how much (in terms of percentage return) has a portfolio outperformed or underperformed its market index. Hence, the other popular traditional portfolio performance measure that can do just that is the Jensen-*alpha* Index derived by Jensen (1968) based on the Capital Asset Pricing Theory (CAPM) as follows:

$$J_i \quad = \quad \alpha_i = R_i - \left[R_f + \beta_i\left(R_m - R_f\right)\right] \tag{6.25}$$

where R_i is the return of the portfolio, R_m is the return of the KLCI and R_f is the risk free rate return as represented by the Malaysian T-Bills or the *mudarabah* investment rate for *Shariah*-compliant instrument. The α_i indicates the difference between the portfolio's actual return [R_i] and its expected return as predicted by the CAPM $\left[R_f + \beta_i\left(R_m - R_f\right)\right]$. Since CAPM suggests that the excess return on the portfolio $\left[R_i - R_f\right]$ and the excess return on the market portfolio $\left[R_m - R_f\right]$ are directly related to the beta, β_i, of the portfolio, a portfolio with a beta of zero should have an excess return of zero as well. Therefore, the constant term α_j should be zero for the CAPM to be in equilibrium. However, if α is greater than zero, the expected return of the portfolio is larger than return anticipated by the CAPM equation, thus indicating an undervalued position. Likewise, if α_j is less than zero, the expected return of the portfolio is lower than return anticipated by the CAPM equation, thus implying an overvalued position. Jensen (1968) argued that the

constant term α_j in Equation 6.25 can be used to measure a portfolio's performance since a portfolio manager who possesses a superior stock selection skill will be able to select undervalued securities, thus enabling him to generate return consistently higher than return predicted by the beta. In this instance, the alpha value in the equation would be positive. The index is given in percentages and, since a portfolio is said to be outperforming if the $\alpha_i > 0$, or otherwise, underperforming if the $\alpha_i < 0$, a higher Jensen-*alpha* Index is preferred over a lower Jensen-*alpha* Index.

Despite the more intuitive meaning however, the Jensen-*alpha* index cannot be used to rank a group of portfolios in its original form. Instead, to make the index appropriate for portfolio ranking purposes, the portfolio's Jensen-*alpha* Index should be divided with their portfolio beta in order to adjust the alpha for the differences in the systematic risk of the individual portfolios (Haslem, 2003: 252). Therefore, if the betas of the portfolios are approximately the same, the portfolio ranking given by the adjusted Jensen-*alpha* Index will be similar to the ranking suggested by the original Jensen-*alpha* Index. The adjusted Jensen-*alpha* Index is calculated as follows:

$$\text{Adj. } J_i = \frac{J_i}{\beta_i} \qquad (6.26)$$

6.3 CONCLUDING REMARKS

This chapter has explained the statistical methods used in the quantitative analysis. The ultimate aims of the quantitative analysis are to identify the salient features in the return and risk characteristics of Islamic funds in comparison to conventional funds, and to determine the performance of Islamic funds relative to conventional funds. This is achieved through analysis of three hypothetical portfolios comprising entirely of Malaysian listed equities, namely Conventional Portfolio (CP), *Shariah*-Approved Portfolio (SAP) and Non-*Shariah*-Approved Portfolio (NSAP), which are created solely for the purpose of this study to represent the actual unit trust or mutual funds available in the market. The analysis begins with descriptive analysis which examines the general characteristics of the return and risk of the hypothetical portfolios. This is followed by in-

depth analysis on the behaviour of the hypothetical portfolios' return in terms of their correlation, volatility and the impact of the different equity sizes on the hypothetical portfolios' return. The final part of the quantitative analysis measures the performance of the hypothetical portfolios based on their risk-adjusted return using the three traditional portfolio performance valuation models. Based on the research methodology employed by this study, it is obvious that the quantitative analysis is designed to investigate the structure and performance of Islamic funds thoroughly in order to provide a comprehensive understanding of the behaviour of their return and risk performance. The next chapter discusses the application of the statistical methods and the outcomes of the quantitative analysis.

Chapter 7

EVALUATING THE PERFORMANCE OF CONVENTIONAL AND ISLAMIC-BASED INVESTMENT PORTFOLIOS IN MALAYSIA: QUANTITATIVE ANALYSIS

7.1 INTRODUCTION

This chapter provides the discussion of the methods and results of the quantitative analysis undertaken in this study. The primary objective of the quantitative analysis is to examine the return and risk characteristics of Islamic-based portfolio and to determine if the return and risk of *Shariah*-compliant portfolio is significantly different from the return and risk of conventional portfolio. The analysis is based on a sample of three hypothetical portfolios, namely Conventional Portfolio (CP), *Shariah*-Approved Portfolio (SAP), and Non-*Shariah*-Approved Portfolio (NSAP), each comprising entirely of Malaysian listed equities. The construction of the portfolios is explained in Chapter 5.

This chapter is organised as follows. First, the descriptive analysis of the characteristics and performance of each portfolio is discussed. The chapter continues with empirical analysis of the portfolios' performance, in which, various statistical tests were conducted on the portfolios' return including test of mean return, correlation test, unit root test and regression analysis to investigate the firm size effect, volatility analysis, and valuation of portfolio performance and ranking based on risk-adjusted return. All findings from the descriptive and empirical analyses are discussed in the results discussion section, after which, the chapter ends with a conclusion.

7.2 DESCRIPTIVE ANALYSIS OF RETURN AND RISK CHARACTERISTICS AND PERFORMANCE OF THE HYPOTHETICAL PORTFOLIOS

This section provides the descriptive analysis of the performance of the hypothetical portfolios during the study period from 1990 to 2008. The growth of the portfolios both

in terms of value and return as well as the number of securities in each portfolio is shown in Table 7.1 whilst Table 7.2 gives the statistical summary of the portfolios' performance. In general, the hypothetical portfolios' performance is in line with the performance of the benchmark Kuala Lumpur Composite Index (KLCI) as depicted in Figure 4.1 previously (see page 85). The investment value of the portfolios reached their highest level during the market rally period before succumbing to profit taking activities and the adverse impact from the 1997 Asian financial crisis. Several structural and regulatory changes as well as improvements in trading rules and practices imposed by Bursa Malaysia brought stability to the stock market and hence, portfolio performance in the post-crisis period.

For Conventional Portfolio (CP), which in this study represents conventional or unrestricted funds that invest in both *halal*-approved and non-*halal*-approved securities, the number of stocks in the portfolio increased markedly from 159 stocks in 1990 to 890 stocks in 2008. The number of stocks in the *Shariah*-Approved Portfolio (SAP), which in this study represents Islamic-based or *Shariah*-compliant funds, rose substantially from 109 stocks in 1990 to 770 stocks in 2008. On the other hand, the number of stocks in the Non-*Shariah*-Approved Portfolio (NSAP), which in this study represents non-permissible (*haram*) or "sin" funds, increased moderately from 50 stocks to 120 stocks. The portfolios' composition clearly indicates that, as at end-2008, *Shariah*-compliant stocks have overwhelmingly outnumbered non-*Shariah*-compliant stocks at a ratio of 6:1 based on the 770 stocks approved as *halal* against 120 stocks which are not.

Table 7.1 also reveals that the nominal value of the sample portfolios has fluctuated tremendously throughout the 19-year period, thus suggesting very volatile trading in the Malaysian stock market. The portfolio value for both CP and SAP was impressively higher during the market rally period but at the end of the period eventually ended-up below their initial value. The CP was originally valued at RM1776.39 (£1.00 = RM4.90, approximately) in 1990 but worth RM1384.98 in 2008. Subsequently, its average value per stock reduced from RM11.17 to RM1.56. The value of SAP also declined from RM1674.53 to RM1078.21 whilst its average value per stock dropped from RM15.36 to RM1.40. On the contrary, portfolio value of NSAP increased from RM101.86 in 1990 to RM306.77 in 2008, resulting in the rise of its average per unit price from RM2.04 to RM2.56 during the period.

Table 7.1: Portfolio Performance, 1990-2008

		MARKET RALLY PERIOD								CRISIS PERIOD						POST CRISIS PERIOD				
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
PORTFOLIO VALUE (RM)																				
1	**CP**	1776.39	1626.43	1960.21	7113.79	17568.97	10797.01	5497.72	7363.11	2219.50	1539.98	2692.80	1110.55	1070.97	904.57	1219.71	1141.81	1044.27	1407.40	1384.98
	N	159	169	193	230	260	299	357	401	472	534	555	574	609	631	688	759	830	890	890
	%chg y-o-y		-8.44	20.52	262.91	146.97	-38.55	-49.08	33.93	-69.86	-30.62	74.86	-58.76	-3.56	-15.54	34.84	-6.39	-8.54	34.77	-1.59
	AVE	11.17	9.62	10.16	30.93	67.57	36.11	15.40	18.36	4.70	2.88	4.85	1.93	1.76	1.43	1.77	1.50	1.26	1.58	1.56
2	**SAP**	1674.53	1530.93	1859.72	6883.35	17034.40	10356.60	5024.25	6639.09	1943.55	1336.94	2338.42	907.56	857.42	718.06	956.95	875.59	802.39	1073.80	1078.21
	N	109	116	133	163	186	222	277	314	377	435	456	471	503	525	579	645	714	770	770
	%chg y-o-y		-8.58	21.48	270.13	147.47	-39.20	-51.49	32.14	-70.73	-31.21	74.91	-61.19	-5.52	-16.25	33.27	-8.50	-8.36	33.83	0.41
	AVE	15.36	13.20	13.98	42.23	91.58	46.65	18.14	21.14	5.16	3.07	5.13	1.93	1.70	1.37	1.65	1.36	1.12	1.39	1.40
3	**NSAP**	101.86	95.50	100.49	230.44	534.57	440.41	473.47	724.02	275.95	203.04	354.38	202.99	213.55	186.51	262.76	266.22	241.88	333.60	306.77
	N	50	53	60	67	74	77	80	87	95	99	99	103	106	106	109	114	116	120	120
	%chg y-o-y		-6.24	5.23	129.32	131.98	-17.61	7.51	52.92	-61.89	-26.42	74.54	-42.72	5.20	-12.66	40.88	1.32	-9.14	37.92	-8.04
	AVE	2.04	1.80	1.67	3.44	7.22	5.72	5.92	8.32	2.90	2.05	3.58	1.97	2.01	1.76	2.41	2.34	2.09	2.78	2.56
PORTFOLIO RETURN																				
1	**CP**	0.4654	-0.0927	0.1630	1.3572	0.8986	-0.4840	-0.4437	0.3071	-1.1755	-0.3408	0.7663	-0.7327	-0.0094	-0.1282	0.3747	-0.0701	-0.0704	0.3357	0.0629
	N	159	169	193	230	260	299	357	401	472	534	555	574	609	631	688	759	830	890	890
	%chg y-o-y		-119.93	-275.78	732.48	-33.79	-153.86	-8.33	-169.22	-482.71	-71.01	-324.85	-195.62	-98.72	1269.33	-392.28	-118.72	0.34	-576.97	-81.26
	AVE	0.0029	-0.0005	0.0008	0.0059	0.0035	-0.0016	-0.0012	0.0008	-0.0025	-0.0006	0.0014	-0.0013	0.0000	-0.0002	0.0005	-0.0001	-0.0001	0.0004	0.0001
2	**SAP**	0.4521	-0.0951	0.1687	1.3893	0.8954	-0.4971	-0.4942	0.2954	-1.2188	-0.3444	0.7855	-0.7999	-0.0279	-0.1366	0.3763	-0.0944	-0.0712	0.3317	0.0809
	N	109	116	133	163	186	222	277	314	377	435	456	471	503	525	579	645	714	770	770
	%chg y-o-y		-121.03	-277.42	723.35	-35.55	-155.52	-0.59	-159.78	-512.58	-71.74	-328.08	-201.82	-96.52	390.29	-375.53	-125.07	-24.49	-565.50	-75.61
	AVE	0.0041	-0.0008	0.0013	0.0085	0.0048	-0.0022	-0.0018	0.0009	-0.0032	-0.0008	0.0017	-0.0017	-0.0001	-0.0003	0.0006	-0.0001	-0.0001	0.0004	0.0001
3	**NSAP**	0.6841	-0.0549	0.0573	0.3972	1.0034	-0.1761	0.0919	0.4147	-0.8700	-0.3170	0.6393	-0.4327	0.0649	-0.0959	0.3687	0.0095	-0.0675	0.3485	-0.0004
	N	50	53	60	67	74	77	80	87	95	99	99	103	106	106	109	114	116	120	120
	%chg y-o-y		-108.02	-204.45	592.81	152.62	-117.55	-152.22	351.01	-309.81	-63.56	-301.64	-167.68	-115.00	-247.82	-484.42	-97.42	-808.51	-616.53	-100.10
	AVE	0.0137	-0.0010	0.0010	0.0059	0.0136	-0.0023	0.0011	0.0048	-0.0092	-0.0032	0.0065	-0.0042	0.0006	-0.0009	0.0034	0.0001	-0.0006	0.0029	0.0000
BENCHMARK RETURN																				
1	KLCI	0.4031	-0.0551	0.0681	0.0606	0.5661	-0.1643	0.1218	0.1562	-0.5246	-0.3182	0.6147	-0.3433	-0.0104	-0.0759	0.2983	0.0272	0.0275	0.2868	0.1069
	%chg y-o-y		-113.66	-223.57	-10.97	834.07	-129.02	-174.12	28.25	-435.84	-39.34	-293.19	-155.85	-96.97	629.16	-492.83	-90.87	0.83	944.48	-62.73
2	FBMESI											-0.2026	0.0160	-0.0725	0.1817	0.0879	-0.0913	0.2352	0.1298	0.1989
	%chg y-o-y												-107.89	-553.81	-350.54	-51.63	-203.95	-357.53	-44.84	53.27

Note:

CP - Conventional/Unrestricted Portfolio
SAP - *Shariah* Approved Portfolio
NSAP - Non-*Shariah*-Approved Portfolio
N - Total companies
% chg y-o-y - Yearly percentage changes
AVE - Average
KLCI - Kuala Lumpur Composite Index
FBMESI - FT Bursa Malaysia Emas *Shariah* Index (FBMSHA)
RM - Ringgit Malaysia (£1.00 = RM4.66 approx.)

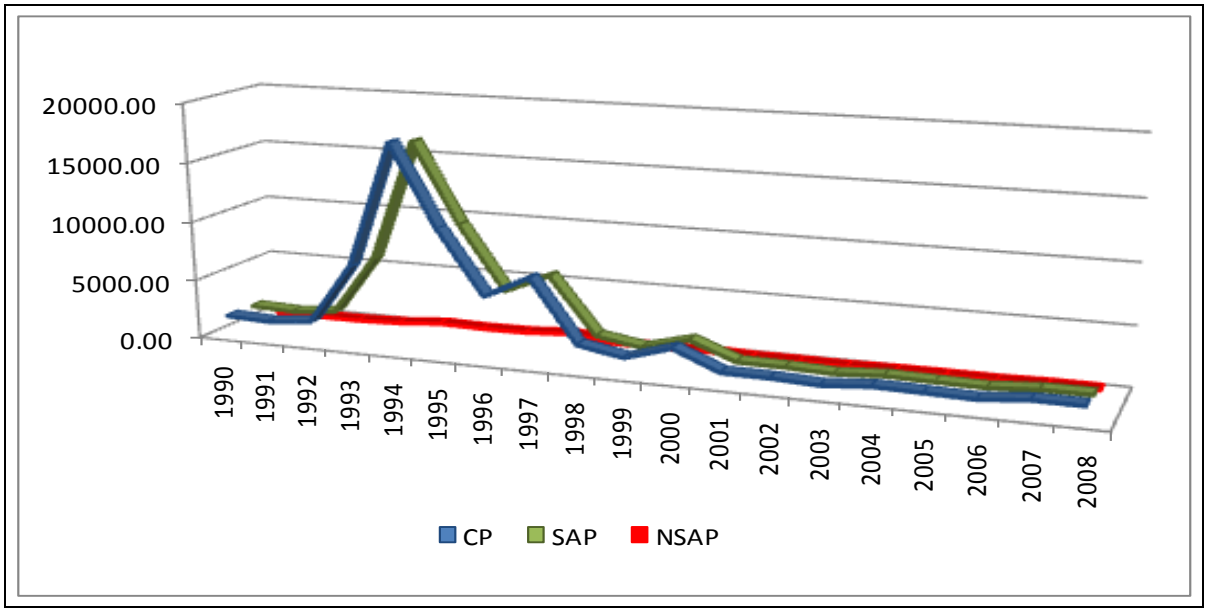
The decline in the portfolio value of CP and SAP is largely attributed to the sharp fall in share prices during the crisis period coupled with the slow recovery in the post-crisis period and the significant increase in the number of new stocks included in the portfolios. Since the 1992–1993 market rally was driven mainly by speculative trading concentrating on medium and small-capitalised stocks, the strong performance of these stocks enabled CP and SAP portfolios to outperform NSAP both in terms of value and return. Unfortunately however, these stocks suffered heavy losses due to profit taking activities that coincided with the 1997 Asian financial crisis whilst recovery in the aftermath of the crisis was insufficient to push the prices back to their pre-crisis level. On the other hand, the ability of NSAP portfolio to maintain its performance despite the volatile market condition signifies the superior investment quality of its component stocks despite the portfolio having the lowest number of stocks. Notwithstanding this, SAP was able to outperform CP and NSAP as well as the benchmark KLCI in 2008 supported by the strong performance of plantation stocks amid poorer performance of other sectors, particularly finance-related stocks. With regards to benchmark performance, both the KLCI and the FT Bursa Malaysia Emas *Shariah* Index (FBMSHA) posted positive returns during their respective period. The KLCI gained a cumulative 124.55 per cent return throughout the 19-year period, thus outperforming both the CP and SAP portfolios but underperformed the NSAP portfolio. For FBMSHA however, its cumulative return of 48.29 per cent for the 10-year period from 1999 to 2008 is below the return achieved by any of the portfolios or the KLCI arguably because majority of the *Shariah* index components are medium and small-capitalised stocks. The descriptive statistics of the portfolio performance is shown in Table 7.2.

Table 7.2: Selected Descriptive Statistics of the Sample Portfolios' Performance, 1990-2008

	Portfolio Value (RM)			**Portfolio Return**		
	CP	**SAP**	**NSAP**	**CP**	**SAP**	**NSAP**
Mean	3654.75	336.72	292.02	0.0628	0.0524	0.1087
Median	1626.43	1530.93	262.76	-0.0094	-0.0279	0.0573
Std. Deviation	4356.83	4253.34	159.67	0.5739	0.5917	0.4202
Skewness	2.251	2.288	1.212	0.141	0.121	0.186
Kurtosis	5.217	5.426	1.720	0.614	0.620	0.672
Minimum	904.57	718.06	95.50	-1.1755	-1.2188	-0.8700
Maximum	17568.97	17034.40	724.02	1.3572	1.3893	1.0034
No. of Stocks:						
Start Period - 1990	159	109	50	159	109	50
End Period - 2008	890	770	120	890	770	120

Table 7.2 reveals that NSAP has outperformed both CP and SAP over the 19-year period since its mean return of 10.87 per cent is the highest amongst the three portfolios as compared to 6.28 per cent and 5.24 per cent return posted by CP and SAP, respectively. NSAP also has the lowest risk based on its standard deviation of 42.02 per cent against 57.39 per cent for CP and 59.17 per cent for SAP. The considerably high standard deviation in comparison to the mean return during the full sample period was due to the wild swing in share prices as reflected by the huge spread between the minimum and the maximum level of the portfolios' value and return. Notwithstanding however, NSAP has the lowest volatility as compared to CP and SAP. The table also indicates that SAP generated the lowest mean return but have the highest risk which is clearly an unfavourable situation as it could seriously undermine any competitive advantage that the Islamic-based portfolio might have. Figure 7.1a suggests that the SAP is tracking the CP's performance very closely which is due to the similarities in their component stocks, as 86 per cent of the securities listed on Bursa Malaysia are *halal*-approved stocks. The figure reveals that both portfolios reached their highest value in 1993–1994 periods in a rather dramatic style driven by the bullish market sentiment but the rally was short-lived by intense profit taking activities in 1995, followed by the Asian financial crisis which started in mid-1997. Trading activities however, were generally lacklustre after the crisis was over and with exception of the one final push in 2000 to revive the market, there was no significant recovery in share prices, hence the portfolios' value slide below their pre-market rally levels.

Figure 7.1a: Portfolio Value Trend



On the contrary, the NSAP enjoyed stronger performance as compared to CP and SAP as shown by Figure 7.1b below. The portfolio reached a higher value twice each in 1994 and 1997, respectively supported particularly by its finance-related stocks before it was subdued by profit taking activities and poor market condition in both crisis and post-crisis periods. Nevertheless, NSAP was able to sustain its performance as reflected by the portfolio's value which remains above its pre-market rally level.

Figure 7.1b: NSAP Portfolio Value Trend

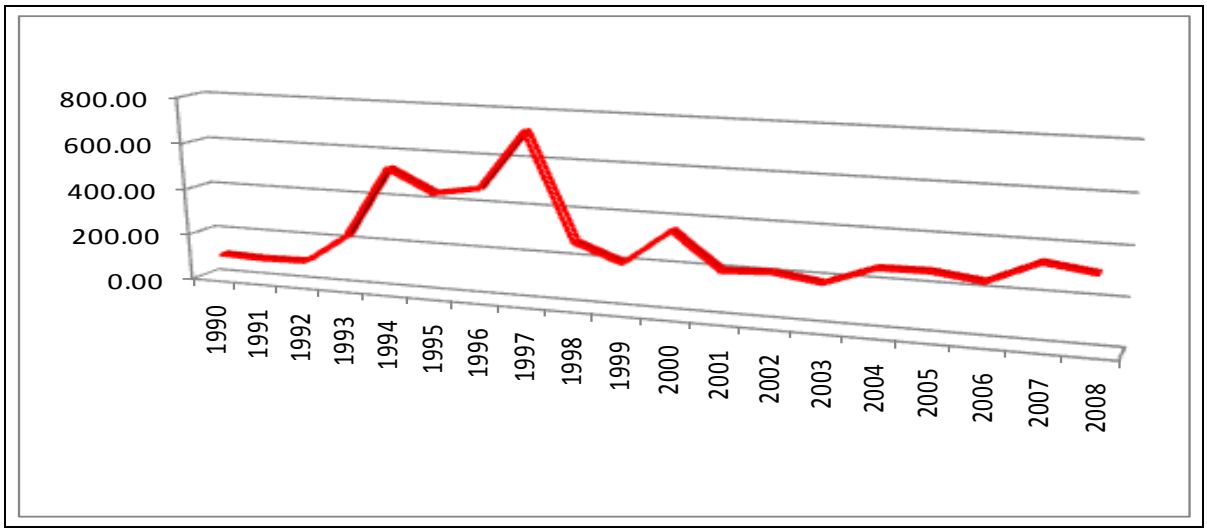
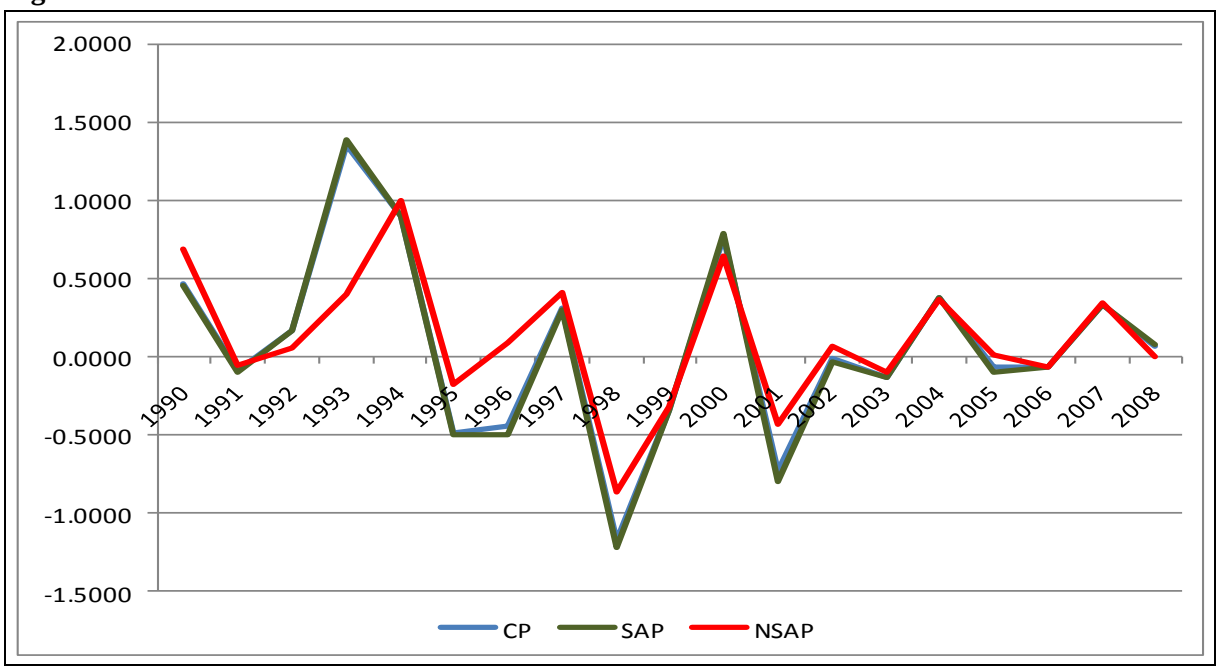


Figure 7.2 shows the return trend of the three hypothetical portfolios. The figure indicates that the portfolios' returns are positively correlated especially for CP and SAP. SAP also outperformed NSAP considerably well during the market rally period particularly in 1992–1994 but underperformed during the remaining periods. One plausible reason is because the medium and small-capitalised stocks which form the majority of the *Shariah*-compliant portfolios' component stocks suffered heavy losses during the bearish market. The SAP however, managed to outperform the NSAP in 2008 on the back of a strong performance of its plantation-related stocks. The figure, which also gives a graphical evidence of the level of volatility in the portfolios' return, reveals a strong mean reversion trend, thus implying a significantly high volatility in the portfolios' long-term return performance. This suggests that an actual unit trust or mutual fund in Malaysia should adopt an active fund management strategy in view of the potentially greater risk if the unit trust or mutual fund simply relies on the passive buy-and-hold strategy while investing for a considerably long-term period.

Figure 7.2: Portfolio Return Trend



To conclude, the descriptive analysis thus far has established that the performance of CP, SAP and NSAP are positively correlated and substantially influenced by the general market performance. The CP and SAP portfolios performed exceptionally well during the market rally period but considerably underperformed the NSAP in the crisis as well as post-crisis period. However, there is a potential bias if conclusion is to be made solely from the full period sample in view that the huge differences in the volatility of the portfolio values and return performance in the different sub-periods might skew the long-run performance, thus affecting the accuracy of the results based on the full period sample. Likewise, it is also premature to assume that NSAP is superior to CP and SAP without analysing each of the portfolio's return thoroughly. Therefore, the following section will focus on the analysis of the portfolios' characteristics in an attempt to establish their return and risk profiles.

7.2.1 General Characteristics of the Conventional Portfolio (CP)

Performance of the Conventional Portfolio (CP) for both full and sub-period samples together with their relevant statistics is shown in Table 7.3 and Figure 7.3. Table 7.3 reveals that CP posted positive cumulative return of 118.34 per cent over the 19-year period with its yearly return increasing by an average of 6.23 per cent. The standard deviation however, is high at 57.39 per cent. Therefore, the total return is arguably

unimpressive in view of the long holding period and substantially high portfolio's risk level. This was particularly due to the significant rise in stock prices during the market rally period which was followed almost immediately by the sharp decline in stock prices during the crisis period as well as the lengthy but slow recovery in the post-crisis period. As return performance was significantly skewed during the market rally and crisis periods, this could explain for the unsatisfactory return level despite the considerably high standard deviation in the full sample period. Therefore, further examination on the return performance within the different sub-period is necessary.

The conventional portfolio performed remarkably well during the market rally period accumulating a total return of 217.09 per cent or a mean return of 27.14 per cent per year. The portfolio's risk however, is high based on the portfolio's standard deviation of 59.56 per cent but the excessive risk corresponds to the period's impressive gains, nevertheless. During the period, CP outperformed SAP and KLCI but underperformed the NSAP. Its beta of 1.41 times indicates that trading in this portfolio is fairly volatile in comparison to the benchmark KLCI's performance. In the crisis period however, the portfolio posted negative return averaging at 27.00 per cent loss per annum amid high standard deviation and volatile trading. The return and risk were more stable in the post-crisis period with the portfolio posting a cumulative return of 63.27 per cent on the back of 12.65 per cent average annual return and standard deviation of 19.33 per cent. The return is higher than SAP but smaller than NSAP and the KLCI which gained 74.67 per cent accumulative return during the same period.

Figure 7.3 shows CP's return distribution on yearly basis throughout the 19-year period. The bulk of the portfolio's return was accumulated during the market rally period particularly at the peak of the rally in 1993 and 1994. Unfortunately however, the portfolio lost most of its gains when it succumbed to profit taking activities in 1995 and 1996. The market staged a rebound in late-1996 and early-1997 periods which enabled the portfolio to earn positive return in 1997 but the rebound was cut short by the Asian financial crisis that started in mid-1997. The portfolio's return remained volatile during the crisis period especially in 2000 and 2001 before trading became more stable following various improvements in the Malaysian stock market which were undertaken to enhance the efficiency of the market and to curb excessive speculation, thus ensuring a more orderly development of the stock market industry.

Table 7.3: Return of the Conventional Portfolio (CP)

	Year	Return	Statistics	Sub-Period
Market Rally Period	1990	0.4654	TOTAL	2.1709
	1991	-0.0927	MEAN	0.2714
	1992	0.1630	STD DEV	0.5956
	1993	1.3572	COVAR	0.0693
	1994	0.8986	BETA	1.4094
	1995	-0.4840		
	1996	-0.4437		
	1997	0.3071		
Crisis Period	1998	-1.1755	TOTAL	-1.6203
	1999	-0.3408	MEAN	-0.2700
	2000	0.7663	STD DEV	0.6057
	2001	-0.7327	COVAR	0.2133
	2002	-0.0094	BETA	1.5881
	2003	-0.1282		
Post-Crisis Period	2004	0.3747	TOTAL	0.6327
	2005	-0.0701	MEAN	0.1265
	2006	-0.0704	STD DEV	0.1933
	2007	0.3357	COVAR	0.0233
	2008	0.0629	BETA	1.6027
Full Period Statistics	TOTAL	1.1834		
	MEAN	0.0623		
	STD DEV	0.5739		
	VAR	0.3294		
	COVAR	0.1294		
	BETA	1.5957		

Figure 7.3: Return Trend of the Conventional Portfolio (CP)

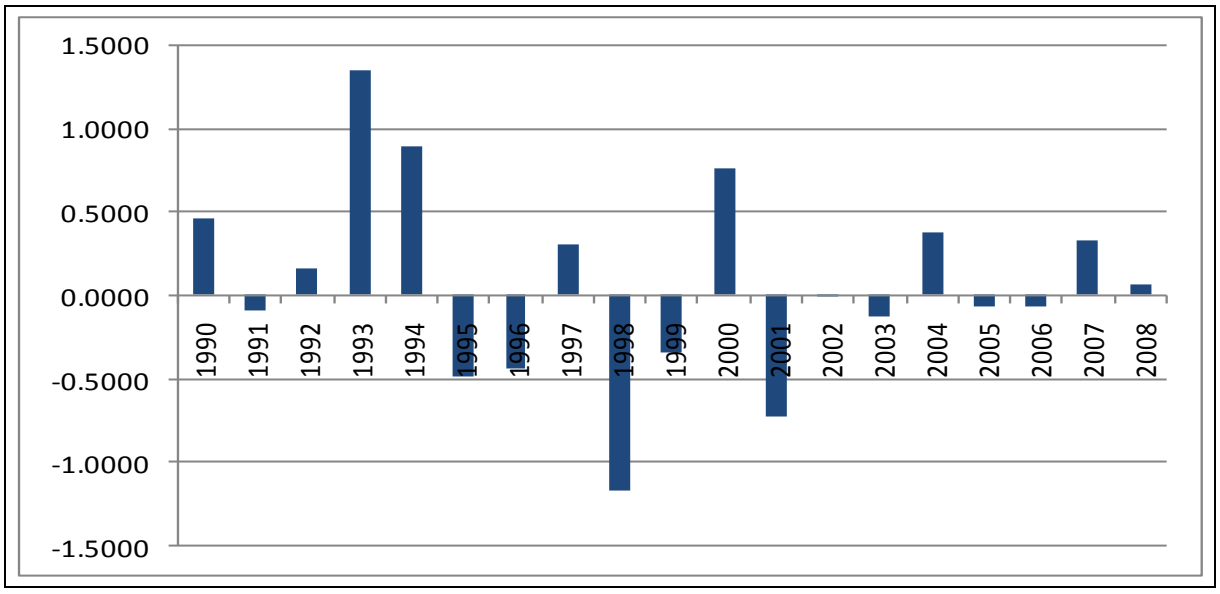


Figure 7.4 gives the breakdown of return based on contribution from individual industries. Construction sector is the single largest contributor followed by plantation, industrial engineering, finance, oil, tobacco, automobile, telecommunication and properties sectors. Construction contributed 71.61 per cent in cumulative return throughout the period which accounts for 60.51 per cent of the total portfolio's earnings. Despite the impressive profit however, the sector is also the riskiest since its standard deviation was the highest among the various industries in the portfolio. In fact, the construction sector's profit was accumulated almost entirely during the market rally period but it became the worst performing industry in the portfolio during the crisis period. Fortunately, strong performance by its finance and plantation stocks in the post-crisis period helped the portfolio to maintain its profitability. Based on a risk-adjusted return, CP's two best performing industries are its plantation and tobacco sectors but further examination on the portfolio's performance indicates that its return was mainly supported by large-capitalised stocks amid poorer performance by medium and small-capitalised stocks in the crisis and post-crisis periods.

Figure 7.4: Return of the Conventional Portfolio (CP) Based on Sectors, 1990-2008

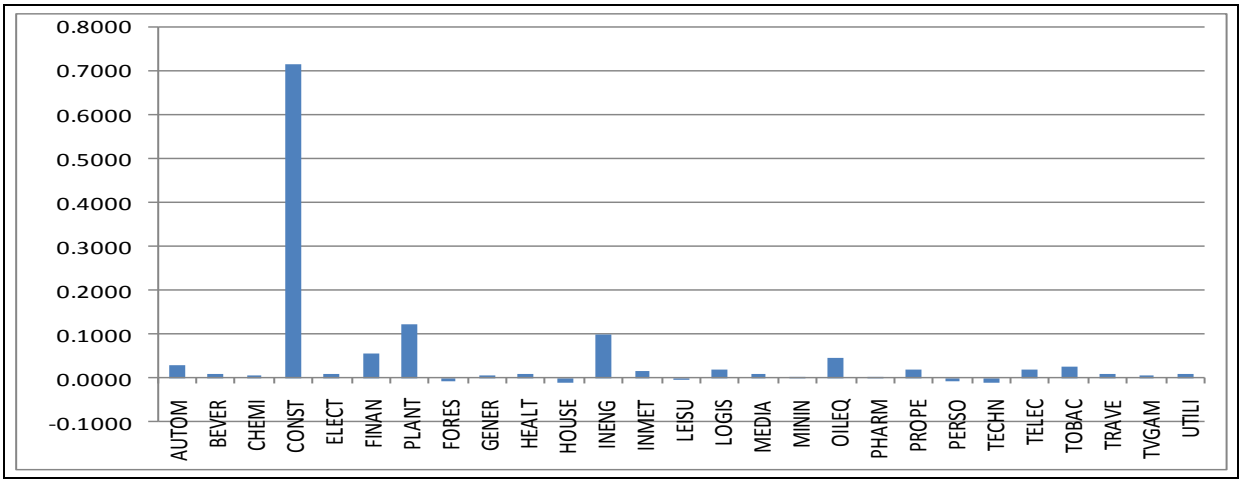


Table 7.4 reveals the return correlation amongst various industries in the conventional portfolio. Construction sector has positive but low and insignificant correlation with the other industries except with automobile, beverages, chemical and the benchmark KLCI which partly explain its superior performance. Tobacco sector, one of the portfolio's major profit contributors, is uncorrelated with construction, plantation and industrial engineering, and is also not significantly correlated with the KLCI, thus making it a favourable industry.

Table 7.4: Industry Return Correlation – Conventional Portfolio (CP)

		AUTOM	BEVER	CHEMI	CONST	ELECT	FINAN	PLANT	FORES	GENER	HEALT	HOUSE	INENG	INMET	LEISU	LOGIS	MEDIA	MININ	OILEQ	PHARM	PROPE	PERSO	TECHN	TELEC	TOBAC	TRAVE	TVGAM	UTILI	KLCI
AUTOM	Pearson Correlation	1																											
	Sig. (2-tailed)																												
	N	19																											
BEVER	Pearson Correlation	.680**	1																										
	Sig. (2-tailed)	0.001																											
	N	19	19																										
CHEMI	Pearson Correlation	.766**	.698**	1																									
	Sig. (2-tailed)	0.000	0.001																										
	N	19	19	19																									
CONST	Pearson Correlation	0.061	0.235	0.224	1																								
	Sig. (2-tailed)	0.804	0.332	0.356																									
	N	19	19	19	19																								
ELECT	Pearson Correlation	.912**	.713**	.810**	0.222	1																							
	Sig. (2-tailed)	0.000	0.001	0.000	0.361																								
	N	19	19	19	19	19																							
FINAN	Pearson Correlation	.785**	.736**	.868**	0.277	.927**	1																						
	Sig. (2-tailed)	0.000	0.000	0.000	0.251	0.000																							
	N	19	19	19	19	19	19																						
PLANT	Pearson Correlation	.605**	.677**	.864**	0.263	.664**	.755**	1																					
	Sig. (2-tailed)	0.006	0.001	0.000	0.277	0.002	0.000																						
	N	19	19	19	19	19	19	19																					
FORES	Pearson Correlation	.684**	.716**	.898**	0.317	.846**	.957**	.793**	1																				
	Sig. (2-tailed)	0.001	0.001	0.000	0.185	0.000	0.000	0.000																					
	N	19	19	19	19	19	19	19	19																				
GENER	Pearson Correlation	.802**	.763**	.924**	0.393	.864**	.884**	.868**	.875**	1																			
	Sig. (2-tailed)	0.000	0.000	0.000	0.096	0.000	0.000	0.000	0.000																				
	N	19	19	19	19	19	19	19	19	19																			
HEALT	Pearson Correlation	.772**	.770**	.832**	0.353	.869**	.947**	.735**	.902**	.839**	1																		
	Sig. (2-tailed)	0.000	0.000	0.000	0.138	0.000	0.000	0.000	0.000	0.000																			
	N	19	19	19	19	19	19	19	19	19	19																		
HOUSE	Pearson Correlation	.849**	.741**	.946**	0.306	.855**	.879**	.830**	.856**	.950**	.882**	1																	
	Sig. (2-tailed)	0.000	0.000	0.000	0.203	0.000	0.000	0.000	0.000	0.000	0.000																		
	N	19	19	19	19	19	19	19	19	19	19	19																	
INENG	Pearson Correlation	.871**	.689**	.623**	0.175	.885**	.727**	.507*	.593**	.730**	.728**	.724**	1																
	Sig. (2-tailed)	0.000	0.001	0.004	0.473	0.000	0.000	0.027	0.007	0.000	0.000	0.000																	
	N	19	19	19	19	19	19	19	19	19	19	19	19																
INMET	Pearson Correlation	.611**	.668**	.756**	0.240	.776**	.882**	.689**	.865**	.826**	.779**	.780**	.596**	1																
	Sig. (2-tailed)	0.005	0.002	0.000	0.322	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.007																
	N	19	19	19	19	19	19	19	19	19	19	19	19	19															
LEISU	Pearson Correlation	.862**	.587**	.664**	0.103	.915**	.779**	.497*	.627**	.718**	.718**	.732**	.915**	.624**	1														
	Sig. (2-tailed)	0.000	0.008	0.002	0.676	0.000	0.000	0.030	0.004	0.001	0.001	0.000	0.000	0.004															
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19														
LOGIS	Pearson Correlation	.796**	.764**	.872**	0.205	.855**	.887**	.795**	.861**	.887**	.884**	.891**	.676**	.796**	.740**	1													
	Sig. (2-tailed)	0.000	0.000	0.000	0.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000														
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19													
MEDIA	Pearson Correlation	.911**	.610**	.686**	0.123	.943**	.794**	.537*	.654**	.779**	.733**	.764**	.934**	.638**	.959**	.757**	1												
	Sig. (2-tailed)	0.000	0.006	0.001	0.615	0.000	0.000	0.018	0.002	0.000	0.000	0.000	0.000	0.003	0.000	0.000													
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19												
MININ	Pearson Correlation	.674**	.913**	.620**	0.237	.656**	.646**	.546*	.605**	.710**	.695**	.688**	.763**	.613**	.561*	.603**	.612**	1											
	Sig. (2-tailed)	0.002	0.000	0.005	0.329	0.002	0.003	0.016	0.006	0.001	0.001	0.001	0.000	0.005	0.013	0.006	0.005												
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19											
OILEQ	Pearson Correlation	0.401	.761**	.623**	0.358	0.388	.528*	.634**	.586**	.668**	.608**	.670**	0.358	.579**	0.153	.517*	0.256	.793**	1											
	Sig. (2-tailed)	0.089	0.000	0.004	0.132	0.101	0.020	0.004	0.008	0.002	0.006	0.002	0.132	0.009	0.531	0.024	0.291	0.000											
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19										
PHARM	Pearson Correlation	0.136	0.188	0.232	0.023	0.224	0.281	0.114	0.209	0.198	0.259	0.253	0.040	0.198	0.234	0.339	0.207	0.017	0.050	1									
	Sig. (2-tailed)	0.579	0.440	0.339	0.926	0.357	0.245	0.641	0.390	0.415	0.283	0.297	0.871	0.416	0.335	0.156	0.395	0.944	0.838										
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19									
PROPE	Pearson Correlation	.771**	.800**	.944**	0.319	.865**	.928**	.892**	.923**	.978**	.884**	.946**	.722**	.865**	.717**	.894**	.755**	.737**	.690**	0.220	1									
	Sig. (2-tailed)	0.000	0.000	0.000	0.183	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.365									
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19								
PERSO	Pearson Correlation	.786**	.749**	.973**	0.289	.838**	.895**	.882**	.901**	.967**	.859**	.956**	.655**	.787**	.698**	.923**	.738**	.648**	.637**	0.251	.970**	1								
	Sig. (2-tailed)	0.000	0.000	0.000	0.231	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.001	0.000	0.000	0.003	0.003	0.301	0.000								
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19							
TECHN	Pearson Correlation	.914**	.724**	.799**	0.205	.988**	.899**	.665**	.803**	.871**	.843**	.854**	.927**	.750**	.940**	.837**	.968**	.695**	0.396	0.216	.870**	.837**		1						
	Sig. (2-tailed)	0.000	0.000	0.000	0.399	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.093	0.373	0.000	0.000							
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19						
TELEC	Pearson Correlation	0.439	0.437	.461*	0.039	.621**	.679**	.571*	.623**	.477*	.590**	0.399	.489*	.617**	.538*	.524*	.488*	0.326	0.128	-0.081	.556*	.467*	.577*	1					
	Sig. (2-tailed)	0.060	0.062	0.047	0.875	0.005	0.001	0.011	0.004	0.039	0.008	0.090	0.034	0.005	0.017	0.021	0.034	0.173	0.603	0.741	0.013	0.044	0.010						
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19					
TOBAC	Pearson Correlation	-0.106	0.044	-0.074	-0.045	0.049	0.062	-0.130	0.047	-0.053	0.002	-0.069	-0.012	0.198	-0.065	-0.032	0.029	0.059	0.124	0.396	-0.017	-0.096	0.020	-0.021	1				
	Sig. (2-tailed)	0.666	0.857	0.763	0.854	0.843	0.800	0.596	0.849	0.831	0.994	0.780	0.960	0.415	0.792	0.897	0.907	0.810	0.613	0.093	0.944	0.695	0.937	0.931					
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19				
TRAVE	Pearson Correlation	.636**	.786**	.788**	0.349	.801**	.915**	.854**	.911**	.855**	.873**	.789**	.642**	.865**	.609**	.799**	.639**	.693**	.642**	0.088	.911**	.833**	.782**	.763**	0.046	1			
	Sig. (2-tailed)	0.003	0.000	0.000	0.143	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.006	0.000	0.003	0.001	0.003	0.721	0.000	0.000	0.000	0.000	0.852				
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19			
TVGAM	Pearson Correlation	.730**	.765**	.812**	0.356	.849**	.892**	.849**	.895**	.850**	.889**	.822**	.646**	.704**	.650**	.864**	.703**	.593**	.539*	0.210	.873**	.863**	.818**	.628**	-0.030	.900**	1		
	Sig. (2-tailed)	0.000	0.000	0.000	0.134	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.001	0.003	0.000	0.001	0.007	0.017	0.388	0.000	0.000	0.000	0.004	0.904	0.000			
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19		
UTILI	Pearson Correlation	.467*	.521*	.594**	0.113	.645**	.756**	.709**	.690**	.644**	.627**	.570*	0.420	.732**	.544*	.638**	.517*	0.352	0.294	0.416	.705**	.629**	.619**	.791**	0.129	.797**	.695**	1		
	Sig. (2-tailed)	0.044	0.022	0.007	0.644	0.003	0.000	0.001	0.001	0.003	0.004	0.011	0.074	0.000	0.016	0.003	0.023	0.139	0.223	0.076	0.001	0.004	0.005	0.000	0.598	0.000	0.001		
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	
KLCI	Pearson Correlation	.728**	.806**	.741**	.461*	.809**	.845**	.737**	.782**	.836**	.901**	.853**	.762**	.749**	.655**	.757**	.717**	.787**	.743**	0.154	.856**	.789**	.807**	.494*	0.147	.863**	.840**	.571*	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.047	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.001	0.000	0.000	0.530	0.000	0.000	0.000	0.031	0.549	0.000	0.000	0.011	
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

To conclude, CP is characterised by volatile performance in which its return and risk level is substantially influenced by the overall market performance. This is evident from the varying performance in different market conditions in the sub-period samples. Although the portfolio was able to generate positive cumulative return throughout the period, its performance was volatile as indicated by the high standard deviation and portfolio beta. The portfolio achieved its highest return in the market rally period which even exceeded the KLCI's return but suffered heavy losses in the crisis period. CP's return was mainly supported by large-capitalised stocks especially those in construction, finance, plantation, industrial engineering, oil and tobacco sectors. Since several of its major income generating sectors such as construction and tobacco are not significantly correlated with the other industries in the portfolio, CP was able to maximise the benefit from its industry diversification.

7.2.2 General Characteristics of the *Shariah*-Approved Portfolio (SAP)

The characteristics of the *Shariah*-Approved Portfolio (SAP) in different sub-periods is summarised in Table 7.5 and Figure 7.5. Table 7.5 reveals that the Islamic-based portfolio accumulated 99.58 per cent return over the 19-year period which is the lowest cumulative return as compared to CP (118.34 per cent), NSAP (206.51 per cent) and the KLCI (124.55 per cent), unfortunately. On a year-to-year basis, SAP posted an average return of 5.24 per cent per annum but its standard deviation of 59.17 per cent and beta of 1.64 times makes it the most risky among the portfolios. The highest return was achieved during the market rally period with cumulative profit of 211.45 per cent or an average of 26.43 per cent per year. The risk however, is high at 61.17 per cent standard deviation and beta of 1.40 times. During the crisis period, the portfolio generated a total loss averaging at 29.03 per cent per year, the worst among the three portfolios, despite having the highest standard deviation of 62.91 per cent and beta of 1.65 times. In the post-crisis period, the portfolio made the most recovery relative to CP and NSAP with a total profit of 62.32 per cent or 12.46 per cent per annum amid more stable share prices and market performance. Although the portfolio's risk was reduced substantially as compared to the crisis period, SAP remained the riskiest portfolio with a standard deviation of 19.72 per cent and beta of 1.63 times. Figure 7.5 indicates that SAP return was in accordance with CP as both portfolios enjoyed their highest profit during the market rally period.

Table 7.5: Return of the *Shariah*-Approved (SAP) Portfolio

	Year	Return	Statistics	Sub-Period
Market Rally Period	1990	0.4521	TOTAL	2.1145
	1991	-0.0951	MEAN	0.2643
	1992	0.1687	STD DEV	0.6117
	1993	1.3893	COVAR	0.0690
	1994	0.8954	BETA	1.4033
	1995	-0.4971		
	1996	-0.4942		
	1997	0.2954		
Crisis Period	1998	-1.2188	TOTAL	-1.7420
	1999	-0.3444	MEAN	-0.2903
	2000	0.7855	STD DEV	0.6291
	2001	-0.7999	COVAR	0.2210
	2002	-0.0279	BETA	1.6454
	2003	-0.1366		
Post-Crisis Period	2004	0.3763	TOTAL	0.6232
	2005	-0.0944	MEAN	0.1246
	2006	-0.0712	STD DEV	0.1972
	2007	0.3317	COVAR	0.0237
	2008	0.0809	BETA	1.6300
Full Period Statistics	TOTAL	0.9958		
	MEAN	0.0524		
	STD DEV	0.5917		
	VAR	0.3502		
	COVAR	0.1327		
	BETA	1.6359		

Figure 7.5: Return Trend of the *Shariah*-Approved Portfolio (SAP)

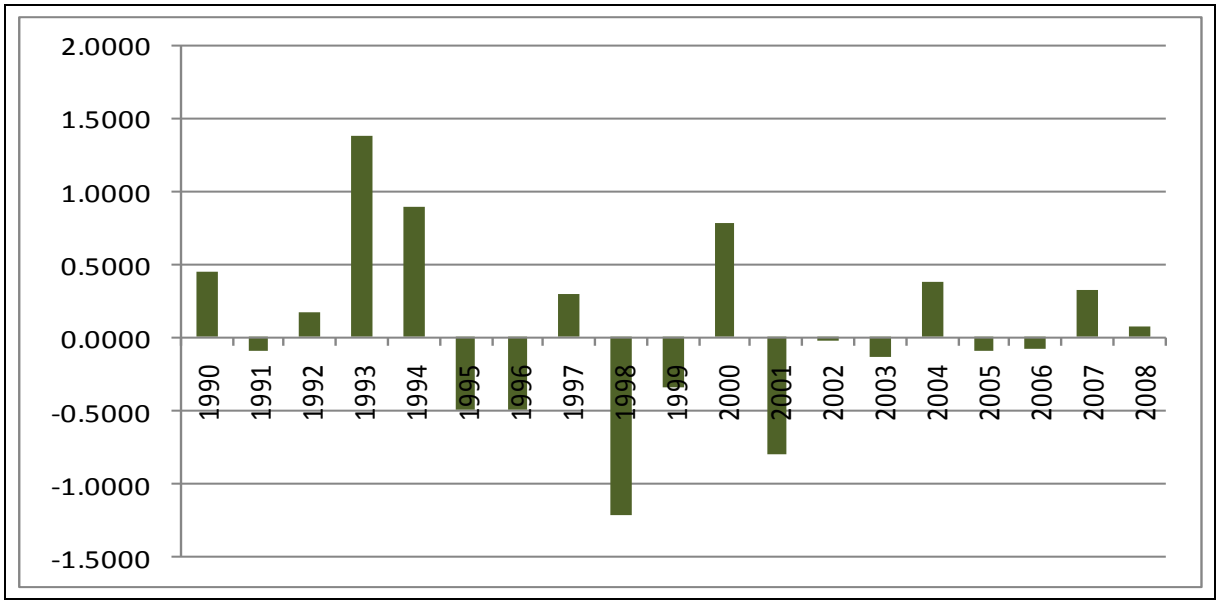


Figure 7.6 highlights the breakdown of return based on individual sectors in the SAP. Most of its income was generated by the construction, plantation, industrial engineering, oil, automobile and telecommunication sectors. However, with the construction sector generating 61.90 per cent in cumulative profit which accounts for 62.16 per cent of the total SAP's return, this implies an overreliance towards a single sector for the portfolio's income. This certainly does not augur well for SAP considering that the construction sector is also the riskiest industry in the portfolio based on the sector's high standard deviation. Therefore, when construction-related stocks incurred heavy losses during the crisis period, performance of SAP was also severely affected. Instead, the best performing industry in SAP was the plantation sector, but with a 15.07 per cent cumulative return, its share of profit is still far below that of the construction sector. Nevertheless, the plantation sector emerged as the largest profit contributor to SAP during the post-crisis period amid a relatively low standard deviation, thus providing the portfolio with a good income support.

Figure 7.6: Return of the *Shariah*-Approved Portfolio (SAP) Based on Sectors, 1990-2008

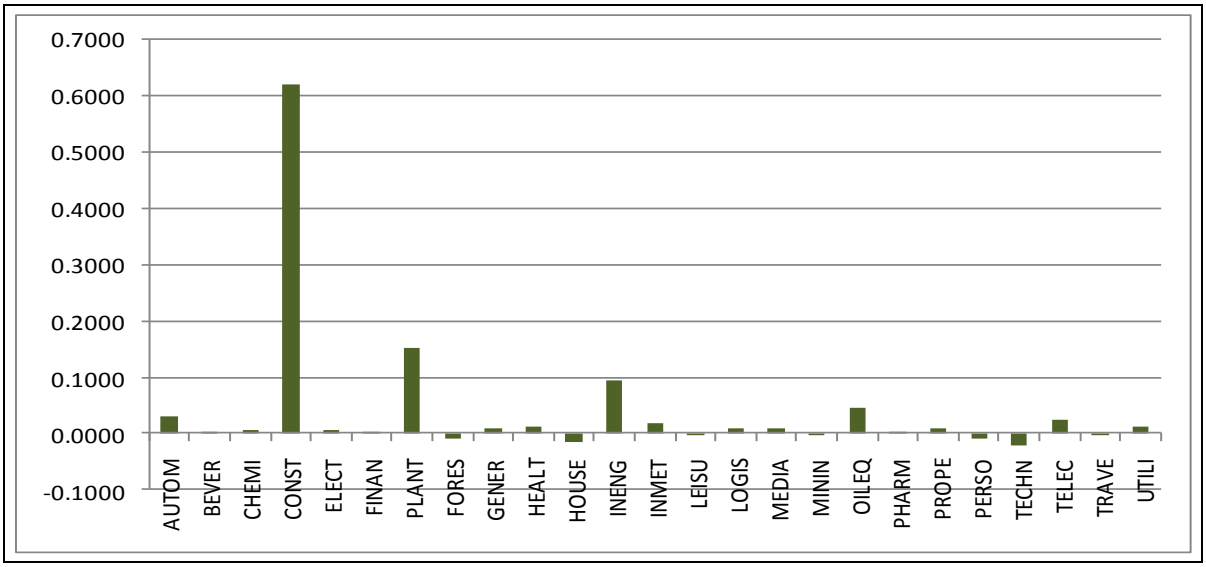


Table 7.6 provides the return correlation between all sectors in SAP's portfolio. Construction industry has positive but low and insignificant correlation with the other industries except with automobile, beverages, chemical and the benchmark KLCI that partly explain its superior performance. Unfortunately however, none of the industries has negative correlation, which implies that SAP may not be able to maximise the benefit from industry diversification since all sectors in the portfolio are likely to move in similar direction.

Table 7.6: Industry Return Correlation – *Shariah*-Approved Portfolio (SAP)

		AUTOM	BEVER	CHEMI	CONST	ELECT	FINAN	PLANT	FORES	GENER	HEALT	HOUSE	INENG	INMET	LEISU	LOGIS	MEDIA	MININ	OILEQ	PHARM	PROPE	PERSO	TECHN	TELEC	TRAVE	UTILI	KLCI	FBMESI
AUTOM	Pearson Correlation	1																										
	Sig. (2-tailed)																											
	N	19																										
BEVER	Pearson Correlation	.620**	1																									
	Sig. (2-tailed)	.005																										
	N	19	19																									
CHEMI	Pearson Correlation	.744**	.537*	1																								
	Sig. (2-tailed)	.000	.018																									
	N	19	19	19																								
CONST	Pearson Correlation	.062	.270	.239	1																							
	Sig. (2-tailed)	.801	.263	.324																								
	N	19	19	19	19																							
ELECT	Pearson Correlation	.881**	.582**	.806**	.222	1																						
	Sig. (2-tailed)	.000	.009	.000	.361																							
	N	19	19	19	19	19																						
FINAN	Pearson Correlation	.670**	.464*	.959**	.214	.667**	1																					
	Sig. (2-tailed)	.002	.045	.000	.380	.002																						
	N	19	19	19	19	19	19																					
PLANT	Pearson Correlation	.577**	.450	.845**	.263	.637**	.775**	1																				
	Sig. (2-tailed)	.010	.053	.000	.277	.003	.000																					
	N	19	19	19	19	19	19	19																				
FORES	Pearson Correlation	.635**	.480*	.892**	.323	.851**	.796**	.760**	1																			
	Sig. (2-tailed)	.003	.037	.000	.178	.000	.000	.000																				
	N	19	19	19	19	19	19	19	19																			
GENER	Pearson Correlation	.821**	.616**	.862**	.250	.945**	.735**	.755**	.862**	1																		
	Sig. (2-tailed)	.000	.005	.000	.301	.000	.000	.000	.000																			
	N	19	19	19	19	19	19	19	19	19																		
HEALT	Pearson Correlation	.758**	.602**	.842**	.350	.880**	.725**	.722**	.907**	.868**	1																	
	Sig. (2-tailed)	.000	.006	.000	.142	.000	.000	.000	.000	.000																		
	N	19	19	19	19	19	19	19	19	19	19																	
HOUSE	Pearson Correlation	.835**	.612**	.944**	.313	.841**	.902**	.800**	.833**	.902**	.870**	1																
	Sig. (2-tailed)	.000	.005	.000	.192	.000	.000	.000	.000	.000	.000																	
	N	19	19	19	19	19	19	19	19	19	19	19																
INENG	Pearson Correlation	.884**	.716**	.631**	.181	.879**	.521*	.496*	.589**	.809**	.724**	.730**	1															
	Sig. (2-tailed)	.000	.001	.004	.459	.000	.022	.031	.008	.000	.000	.000																
	N	19	19	19	19	19	19	19	19	19	19	19	19															
INMET	Pearson Correlation	.539*	.435	.739**	.244	.772**	.646**	.644**	.855**	.852**	.765**	.752**	.573*	1														
	Sig. (2-tailed)	.017	.063	.000	.313	.000	.003	.003	.000	.000	.000	.000	.010															
	N	19	19	19	19	19	19	19	19	19	19	19	19	19														
LEISU	Pearson Correlation	.860**	.574*	.680**	.116	.913**	.536*	.489*	.631**	.872**	.727**	.748**	.916**	.620**	1													
	Sig. (2-tailed)	.000	.010	.001	.638	.000	.018	.034	.004	.000	.000	.000	.000	.005														
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19													
LOGIS	Pearson Correlation	.804**	.574*	.914**	.245	.859**	.822**	.830**	.848**	.935**	.882**	.940**	.714**	.807**	.774**	1												
	Sig. (2-tailed)	.000	.010	.000	.313	.000	.000	.000	.000	.000	.000	.000	.001	.000	.000													
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19												
MEDIA	Pearson Correlation	.906**	.576**	.658**	.120	.904**	.553*	.497*	.593**	.851**	.691**	.747**	.936**	.551*	.947**	.755**	1											
	Sig. (2-tailed)	.000	.010	.002	.626	.000	.014	.030	.007	.000	.001	.000	.000	.014	.000	.000												
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19											
MININ	Pearson Correlation	.688**	.910**	.637**	.252	.672**	.606**	.547*	.621**	.692**	.708**	.702**	.772**	.598**	.589**	.653**	.620**	1										
	Sig. (2-tailed)	.001	.000	.003	.298	.002	.006	.015	.005	.001	.001	.001	.000	.007	.008	.002	.005											
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19										
OILEQ	Pearson Correlation	.376	.674**	.610**	.373	.360	.672**	.612**	.564*	.479*	.580**	.652**	.345	.540*	.151	.553*	.220	.779**	1									
	Sig. (2-tailed)	.113	.002	.006	.116	.131	.002	.005	.012	.038	.009	.002	.148	.017	.538	.014	.365	.000										
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19									
PHARM	Pearson Correlation	.138	.092	.258	.029	.259	.170	.115	.218	.312	.278	.282	.050	.197	.256	.305	.177	.015	.018	1								
	Sig. (2-tailed)	.573	.708	.286	.906	.284	.487	.639	.370	.193	.249	.242	.840	.419	.291	.203	.470	.951	.943									
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19								
PROPE	Pearson Correlation	.751**	.599**	.957**	.315	.862**	.880**	.884**	.909**	.946**	.874**	.950**	.712**	.839**	.735**	.951**	.725**	.707**	.642**	.245	1							
	Sig. (2-tailed)	.000	.007	.000	.189	.000	.000	.000	.000	.000	.000	.000	.001	.000	.000	.000	.000	.001	.003	.311								
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19							
PERSO	Pearson Correlation	.758**	.579**	.973**	.307	.830**	.922**	.858**	.891**	.910**	.869**	.956**	.663**	.770**	.709**	.960**	.712**	.675**	.636**	.270	.978**	1						
	Sig. (2-tailed)	.000	.009	.000	.201	.000	.000	.000	.000	.000	.000	.000	.002	.000	.001	.000	.001	.002	.003	.264	.000							
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19						
TECHN	Pearson Correlation	.899**	.650**	.795**	.215	.984**	.667**	.635**	.793**	.946**	.844**	.848**	.930**	.725**	.943**	.856**	.950**	.715**	.376	.231	.863**	.831**	1					
	Sig. (2-tailed)	.000	.003	.000	.377	.000	.002	.003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.113	.341	.000	.000						
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19					
TELEC	Pearson Correlation	.403	.251	.469*	.049	.617**	.272	.596**	.638**	.599**	.601**	.379	.461*	.622**	.504*	.530*	.401	.336	.131	-.093	.555*	.465*	.554*	1				
	Sig. (2-tailed)	.087	.299	.043	.844	.005	.259	.007	.003	.007	.007	.109	.047	.004	.028	.020	.088	.160	.594	.705	.014	.045	.014					
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19				
TRAVE	Pearson Correlation	.725**	.580**	.881**	.358	.860**	.806**	.806**	.907**	.914**	.895**	.893**	.711**	.838**	.731**	.931**	.735**	.704**	.614**	.133	.943**	.946**	.857**	.574*	1			
	Sig. (2-tailed)	.000	.009	.000	.132	.000	.000	.000	.000	.000	.000	.000	.001	.000	.000	.000	.000	.001	.005	.587	.000	.000	.000	.010				
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19			
UTILI	Pearson Correlation	.429	.294	.611**	.116	.667**	.426	.722**	.699**	.765**	.639**	.567*	.414	.736**	.547*	.678**	.451	.357	.267	.403	.720**	.633**	.616**	.796**	.637**	1		
	Sig. (2-tailed)	.067	.222	.005	.636	.002	.069	.000	.001	.000	.003	.011	.078	.000	.015	.001	.053	.133	.269	.087	.001	.004	.005	.000	.003			
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19		
KLCI	Pearson Correlation	.713**	.699**	.738**	.475*	.793**	.666**	.711**	.764**	.807**	.881**	.842**	.759**	.718**	.654**	.780**	.684**	.801**	.739**	.154	.828**	.790**	.799**	.470*	.852**	.550*	1	
	Sig. (2-tailed)	.001	.001	.000	.040	.000	.002	.001	.000	.000	.000	.000	.000	.001	.002	.000	.001	.000	.000	.530	.000	.000	.000	.043	.000	.015		
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	
FBMESI	Pearson Correlation	-.258	-.138	-.053	-.022	-.268	-.123	.278	-.040	-.214	-.078	-.140	-.390	-.214	-.405	-.116	-.455	-.228	.023	.097	-.082	-.122	-.324	.157	-.237	.214	-.157	1
	Sig. (2-tailed)	.287	.572	.830	.930	.268	.616	.249	.870	.378	.750	.568	.099	.378	.086	.636	.050	.348	.924	.692	.738	.619	.177	.521	.330	.378	.521	
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

To conclude, the *Shariah*-compliant portfolio is characterised by return and risk performance that closely resembles the conventional portfolio's performance. The identical performance is due to both portfolios being likely to have similar stocks in their portfolios albeit in different proportion of weight. SAP derived most of its profit during the market rally period with construction, plantation, industrial engineering and oil-related stocks as its major income earners. Although SAP's return is lower than CP and NSAP in the post-crisis period, the portfolio made the most recovery from the losses incurred in the crisis period. Unfortunately however, returns of all sectors in SAP are positively correlated, thus depriving the portfolio from enjoying maximum benefit from its industry diversification. SAP's return is also heavily influenced by the overall market condition since all sectors in the portfolio are likely to move in a similar direction as observed in the sub-periods performance. It also appears that the portfolio depends on defensive sectors such as plantation and oil-related stocks to sustain its earnings. Notwithstanding however, although the results show that SAP has underperformed both CP and NSAP, it is still premature to assume that return from Islamic-based portfolio is inferior to conventional portfolio. Hence, further examination on the portfolios' components is necessary particularly with regards to the impact of different equity sizes on a portfolio's return.

7.2.3 General Characteristics of the Non-*Shariah*-Approved Portfolio (NSAP)

Performance of the Non-*Shariah*-Approved Portfolio (NSAP) is summarised in Table 7.7 and Figure 7.7. Despite having the smallest number of stocks, NSAP was able to accumulate 206.51 per cent return throughout the 19-year study period with a mean yearly return of 10.87 per cent, the highest amongst the three portfolios. In addition, its standard deviation of 42.02 per cent and beta of 1.40 times signifies that NSAP is the least risky portfolio. During the market rally period, NSAP gained 241.76 per cent return with a mean return of 30.22 per cent per annum whilst its standard deviation of 37.41 per cent is about half the risk of the other two portfolios. The portfolio's beta of 1.60 times however, implies that trading in this portfolio is more volatile. In the crisis period, NSAP suffered the lowest losses comparatively, losing an average of 16.86 per cent annually with standard deviation of 46.48 per cent and beta of 1.23 times. In the post-crisis period, NSAP posted the highest return albeit just slightly more than CP and SAP, accumulating

65.90 per cent or 13.18 per cent on a yearly basis while having the lowest standard deviation of 18.72 per cent and beta of 1.51 times, thus making NSAP the best performing portfolio throughout.

Table 7.7: Return of the Non-*Shariah*-Approved (NSAP) Portfolio

	Year	Return	Statistics	Sub-Period
Market Rally Period	1990	0.6841	TOTAL	2.4176
	1991	-0.0549	MEAN	0.3022
	1992	0.0573	STD DEV	0.3741
	1993	0.3972	COVAR	0.0788
	1994	1.0034	BETA	1.6014
	1995	-0.1761		
	1996	0.0919		
	1997	0.4147		
Crisis Period	1998	-0.8700	TOTAL	-1.0115
	1999	-0.3170	MEAN	-0.1686
	2000	0.6393	STD DEV	0.4648
	2001	-0.4327	COVAR	0.1657
	2002	0.0649	BETA	1.2340
	2003	-0.0959		
Post-Crisis Period	2004	0.3687	TOTAL	0.6590
	2005	0.0095	MEAN	0.1318
	2006	-0.0675	STD DEV	0.1872
	2007	0.3485	COVAR	0.0220
	2008	-0.0004	BETA	1.5129
Full Period Statistics	TOTAL	2.0651		
	MEAN	0.1087		
	STD DEV	0.4202		
	VAR	0.1765		
	COVAR	0.1136		
	BETA	1.4003		

Figure 7.7 reveals that, except for the sharp losses in 1998 and 1999 following the Asian financial crisis, NSAP has a more stable performance relative to CP and SAP as reflected through the portfolio's relatively smaller standard deviation. Contrary to CP and SAP whose return rose dramatically in 1993 only to be followed by profit taking activities a year later and severe losses in 1995 and 1996 periods, NSAP continued its 1993 impressive performance to reach its highest return in 1994. After brief profit taking activities in 1995, the portfolio's return resumed its uptrend in 1996 and 1997 periods and

continued to outperform CP and SAP in the post-crisis period. This suggests that NSAP was able to outperform the other two portfolios in the bullish market as well as when the stock market rebounded from its bearish trend. Hence, NSAP is arguably the best performing portfolio, which is attributed to the investment quality of its component stocks as proven by the analysis of the returns of industries in the portfolio.

Figure 7.7: Return Trend of the Non-*Shariah*-Approved Portfolio (NSAP)

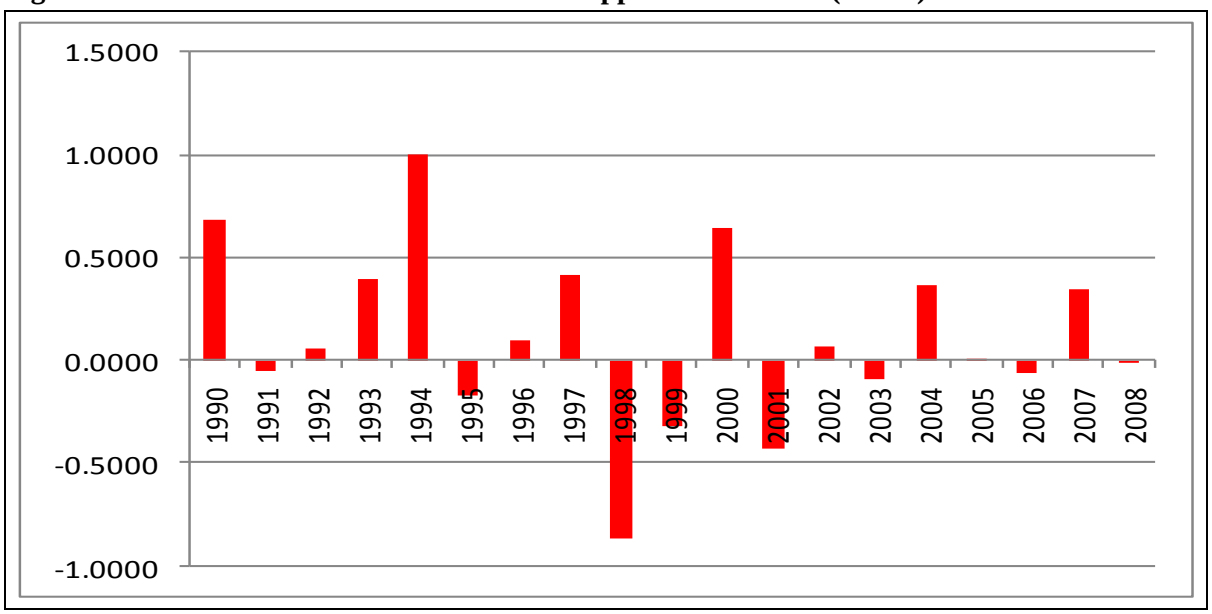


Figure 7.8 indicates that finance, conglomerates, tobacco, properties, travel services, construction and gaming sectors are the major profit contributors to NSAP. Finance sector accounted for 40.72 per cent of the portfolio's total return and is the best performing sector in all sub-periods with its standard deviation lower than the overall portfolio. The conglomerate sector is the second biggest income earner with 16.01 per cent share but the sector suffered heavily during the crisis period. Tobacco is the only sector that generated positive return in all sub-periods and contributed 12.25 per cent to the total return. Together, the three sectors contributed 70 per cent of NSAP's cumulative profit. Hence, unlike CP and SAP, NSAP could rely on several sectors for its earnings. In addition, tobacco sector could provide the portfolio with a significant and sustainable income source based on its consistent return.

Figure 7.8: Return of the Non-*Shariah*-Approved Portfolio (NSAP) Based on Sectors, 1990-2008

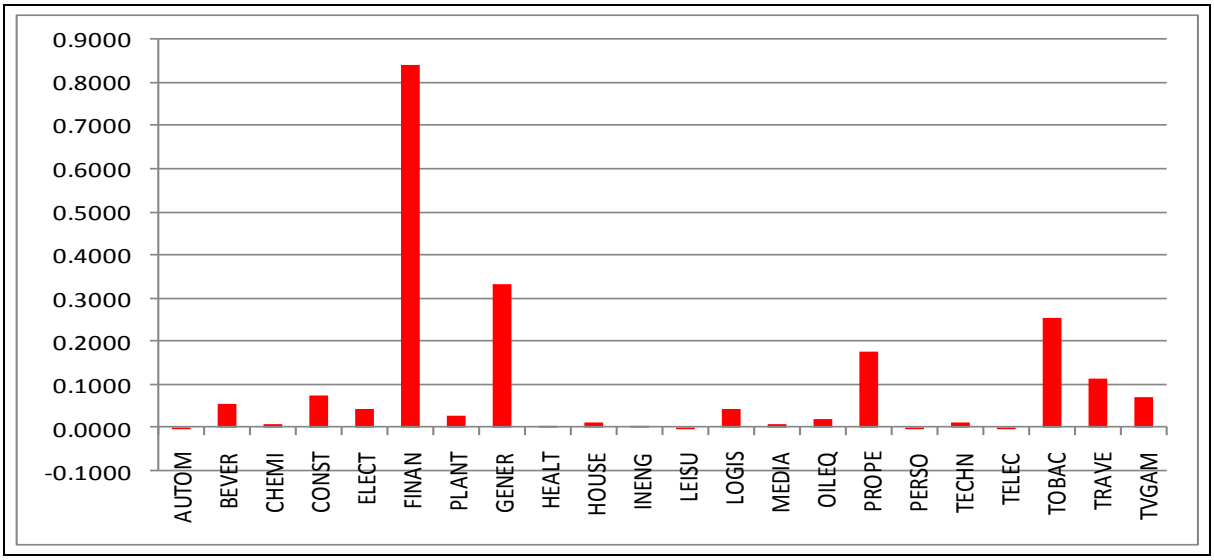


Table 7.8 shows the return correlation of all sectors in the NSAP's portfolio. The table reveals that, in general, returns from all industries in the portfolio are moderately correlated. Finance sector has a significant positive correlation with most of the major industries and with the benchmark KLCI but has low and insignificant correlation with the tobacco sector, the portfolio's third largest income earner. Since finance sector is the single biggest contributor to earnings, this could explain the portfolio's return trend which generally follows the overall market performance. Conglomerate sector is not significantly correlated with tobacco, beverages, electrical, logistic and oil-related industries, hence it offers good diversification benefit. Travel services sector has low and insignificant correlation with logistic, oil and tobacco related stocks. Meanwhile, tobacco sector has low and insignificant correlation with finance, plantation, conglomerate, logistic, oil, properties, travel services and gaming sectors as well as with the KLCI. The moderate correlation level in returns of the major sectors in the portfolio indicates that NSAP is able to maximise the benefit from its industry diversification which could explain the ability of the portfolio to maintain its performance in varying market conditions.

Table 7.8: Industry Return Correlation – Non-*Shariah*-Approved Portfolio (NSAP)

		AUTOM	BEVER	CHEMI	CONST	ELECT	FINAN	PLANT	GENER	HEALT	HOUSE	INENG	LEISU	LOGIS	MEDIA	OILEQ	PROPE	PERSO	TECHN	TELEC	TOBAC	TRAVE	TVGAM	KLCI
AUTOM	Pearson Correlation	1																						
	Sig. (2-tailed)																							
	N	19																						
BEVER	Pearson Correlation	.426	1																					
	Sig. (2-tailed)	.069																						
	N	19	19																					
CHEMI	Pearson Correlation	.264	.794**	1																				
	Sig. (2-tailed)	.275	.000																					
	N	19	19	19																				
CONST	Pearson Correlation	.413	.873**	.918**	1																			
	Sig. (2-tailed)	.079	.000	.000																				
	N	19	19	19	19																			
ELECT	Pearson Correlation	.424	.320	.069	.286	1																		
	Sig. (2-tailed)	.071	.181	.780	.235																			
	N	19	19	19	19	19																		
FINAN	Pearson Correlation	.571*	.525*	.551*	.687**	.409	1																	
	Sig. (2-tailed)	.011	.021	.014	.001	.082																		
	N	19	19	19	19	19	19																	
PLANT	Pearson Correlation	.685**	.474*	.351	.568*	.402	.819**	1																
	Sig. (2-tailed)	.001	.040	.140	.011	.088	.000																	
	N	19	19	19	19	19	19	19																
GENER	Pearson Correlation	.557*	.455	.510*	.542*	.430	.501*	.557*	1															
	Sig. (2-tailed)	.013	.050	.026	.017	.066	.029	.013																
	N	19	19	19	19	19	19	19	19															
HEALT	Pearson Correlation	.007	.034	-.007	.031	-.096	.066	.121	.002	1														
	Sig. (2-tailed)	.978	.891	.977	.900	.697	.789	.623	.992															
	N	19	19	19	19	19	19	19	19	19														
HOUSE	Pearson Correlation	.334	.780**	.934**	.941**	.252	.710**	.495*	.477*	.100	1													
	Sig. (2-tailed)	.163	.000	.000	.000	.298	.001	.031	.039	.685														
	N	19	19	19	19	19	19	19	19	19	19													
INENG	Pearson Correlation	-.110	-.014	-.030	.025	-.093	-.023	.110	.014	.897**	.061	1												
	Sig. (2-tailed)	.655	.955	.902	.919	.705	.925	.653	.955	.000	.805													
	N	19	19	19	19	19	19	19	19	19	19	19												
LEISU	Pearson Correlation	-.091	.286	.146	.172	.293	.256	.018	.140	-.035	.154	-.086	1											
	Sig. (2-tailed)	.712	.236	.551	.481	.224	.291	.941	.569	.888	.529	.727												
	N	19	19	19	19	19	19	19	19	19	19	19	19											
LOGIS	Pearson Correlation	.361	.433	.141	.211	.227	.394	.375	.248	-.168	.176	-.298	.424	1										
	Sig. (2-tailed)	.129	.064	.564	.386	.351	.095	.114	.306	.491	.472	.215	.071											
	N	19	19	19	19	19	19	19	19	19	19	19	19	19										
MEDIA	Pearson Correlation	.486*	.544*	.549*	.656**	.268	.656**	.543*	.529*	.165	.588**	.005	-.025	.378	1									
	Sig. (2-tailed)	.035	.016	.015	.002	.267	.002	.016	.020	.500	.008	.984	.920	.111										
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19									
OILEQ	Pearson Correlation	.220	.165	-.010	.167	-.058	.192	.184	.022	.281	.037	.228	.027	.438	.522*	1								
	Sig. (2-tailed)	.366	.500	.966	.495	.814	.432	.450	.928	.243	.882	.349	.913	.061	.022									
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19								
PROPE	Pearson Correlation	.355	.837**	.953**	.970**	.230	.654**	.492*	.462*	.009	.963**	-.031	.139	.168	.613**	.041	1							
	Sig. (2-tailed)	.136	.000	.000	.000	.344	.002	.033	.046	.972	.000	.899	.572	.491	.005	.868								
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19							
PERSO	Pearson Correlation	.491*	.309	.170	.277	.301	.340	.382	.209	.068	.192	.086	.429	.279	.057	.272	.211	1						
	Sig. (2-tailed)	.033	.199	.488	.251	.210	.155	.107	.391	.781	.432	.727	.067	.248	.817	.259	.385							
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19						
TECHN	Pearson Correlation	.658**	.428	.197	.409	.496*	.487*	.615**	.662**	.102	.271	.073	.231	.350	.508*	.219	.293	.375	1					
	Sig. (2-tailed)	.002	.067	.418	.082	.031	.034	.005	.002	.679	.261	.766	.342	.142	.026	.367	.223	.113						
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19					
TELEC	Pearson Correlation	-.007	-.034	.007	-.031	.096	-.066	-.121	-.002	-1.000**	-.100	-.897**	.035	.168	-.165	-.281	-.009	-.068	-.102	1				
	Sig. (2-tailed)	.978	.891	.977	.900	.697	.789	.623	.992	.000	.685	.000	.888	.491	.500	.243	.972	.781	.679					
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19				
TOBAC	Pearson Correlation	.039	.388	.240	.344	.386	.137	.048	.006	-.163	.329	-.216	-.211	.077	.330	.119	.334	-.217	-.130	.163	1			
	Sig. (2-tailed)	.873	.101	.322	.149	.103	.575	.846	.979	.506	.169	.375	.385	.754	.168	.627	.162	.371	.597	.506				
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19			
TRAVE	Pearson Correlation	.419	.723**	.836**	.885**	.182	.833**	.651**	.498*	.265	.938**	.173	.157	.248	.649**	.165	.884**	.208	.347	-.265	.236	1		
	Sig. (2-tailed)	.074	.000	.000	.000	.455	.000	.003	.030	.274	.000	.478	.522	.306	.003	.501	.000	.394	.146	.274	.331			
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19		
TVGAM	Pearson Correlation	.569*	.485*	.473*	.612**	.525*	.916**	.760**	.591**	.082	.671**	.019	.290	.439	.509*	.151	.567*	.314	.489*	-.082	.199	.790**	1	
	Sig. (2-tailed)	.011	.035	.041	.005	.021	.000	.000	.008	.737	.002	.939	.228	.060	.026	.538	.011	.191	.034	.737	.414	.000		
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	
KLCI	Pearson Correlation	.582**	.739**	.648**	.783**	.522*	.906**	.779**	.622**	.158	.782**	.096	.276	.504*	.715**	.251	.722**	.332	.563*	-.158	.296	.851**	.887**	1
	Sig. (2-tailed)	.009	.000	.003	.000	.022	.000	.000	.004	.518	.000	.694	.252	.028	.001	.300	.000	.165	.012	.518	.219	.000	.000	
	N	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19

** Correlation is significant at the 0.01 level (2-tailed) * Correlation is significant at the 0.05 level (2-tailed)

To conclude, NSAP is generally characterised by high return and moderate risk which is attributable to the investment quality of the stocks in the portfolio. NSAP performed considerably well throughout the 19-year period and has outperformed CP and SAP as well as the benchmark KLCI. The superior performance was essentially due to its profitable but less correlated industries such as finance, conglomerate, tobacco and gaming. NSAP also has more sectors that could provide a substantial portion of income to its total return. Therefore, unlike CP and SAP, NSAP is not overly dependent upon a single industry for its earnings. The moderate and insignificant correlation in returns of its major income contributing sectors is another advantage since it implies that the portfolio will be able to reap the most from its industry diversification. For instance, its finance and conglomerate stocks are poised to outperform in a bullish market whilst its tobacco stocks will provide the much needed support if the overall market turns bearish. With such a properly diversified portfolio, it is clear that NSAP could maximise or sustain its return in any given market condition.

This section has discussed the general characteristics of each of the hypothetical portfolios and established that NSAP is the best performing portfolio as compared to CP and SAP. The chapter continues with the empirical analysis of the portfolios' return in the following section.

7.3 EMPIRICAL ANALYSIS OF THE PORTFOLIOS' PERFORMANCE

This section focuses on the empirical analysis of the hypothetical portfolios' return in an attempt to further investigate the portfolios' performance and the relationship of their return. Several statistical tests were conducted: namely the *t*-tests to determine the significance of the difference in the portfolios' mean return, the correlation tests, the portfolios' volatility tests, the stationary or unit root tests and the ordinary least square (OLS) regression tests. This section also provides the analysis of the size effect and analysis of portfolio performance using the traditional portfolio valuation models. Prior to conducting the statistical tests, the data were tested for their normality, linearity and homoscedasticity to ensure that none of the underlying assumptions is violated.

7.3.1 Test of Significance of the Difference in the Portfolios' Mean Return

The purpose of this test is to analyse the statistical significance of the observed differences in the portfolios' mean return. The test is conducted using the paired sample *t*-test in which returns of two different portfolios are compared directly. The test is necessary as it would establish whether return of SAP is significantly different from return of CP and NSAP.

7.3.1.1 Test of Mean Return – All Period

Table 7.9 provides the results of the paired sample *t*-test on returns of the hypothetical portfolios in the full period sample (1990–2008). The null hypothesis of the test states that the mean return of the portfolios in the full period is not significantly different between one another. Consequently, a rejection of the null hypothesis implies that the difference in the mean return of the portfolios in the full period is significant statistically. The results show that the *t*-test values are not statistically significant at a 5-per cent level which suggests that the null hypothesis of an equal mean return cannot be rejected at this level. Notwithstanding however, there is rather weak evidence that the difference in the mean return of CP and SAP in the full period sample is significantly different since the null hypothesis is rejected at a 10-per cent significance level. The test also provides robust statistical evidence that the mean return of CP and NSAP as well as SAP and NSAP in the full sample period is not significantly different statistically.

Table 7.9: Paired Sample Test – All Period

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	PRCP - PRSAP	.0098789	.0240128	.0055089	-.0016949	.0214528	1.793	18	.090
Pair 2	PRCP - PRNSAP	-.0464000	.2946275	.0675922	-.1884059	.0956059	-.686	18	.501
Pair 3	PRSAP - PRNSAP	-.0562789	.3136730	.0719615	-.2074645	.0949066	-.782	18	.444

7.3.1.2 Test of Mean Return – Market Rally Period

Table 7.10 provides the results of the paired sample *t*-test on returns of the hypothetical portfolios in the market rally period (1990–1997). The null hypothesis of the test states that the mean return of the portfolios in the market rally period is not significantly different between one another. Consequently, a rejection of the null hypothesis implies that the difference in the mean return of the portfolios in the market rally period is significant statistically. The results show that the *t*-test values are not statistically significant at a 5-per cent level which suggests that the null hypothesis of an equal mean return cannot be rejected. Therefore, there is no robust statistical evidence to support that the mean return of the hypothetical portfolios in the market rally period is significantly different.

Table 7.10: Paired Sample Test – Market Rally Period

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	CPRE01 - SAPRE01	.0070500	.0230432	.0081470	-.0122146	.0263146	.865	7	.416
Pair 2	CPRE01 - NSAPRE01	-.0308375	.4437911	.1569039	-.4018562	.3401812	-.197	7	.850
Pair 3	SAPRE01 - NSAPRE01	-.0378875	.4649239	.1643754	-.4265736	.3507986	-.230	7	.824

7.3.1.3 Test of Mean Return – Crisis Period

Table 7.11 provides the results of the paired sample *t*-test on returns of the hypothetical portfolios in the crisis period (1998–2003). The null hypothesis of the test states that the mean return of the portfolios in the crisis period is not significantly different between one another. Consequently, a rejection of the null hypothesis implies that there is a significant difference in the mean return of the portfolios in the crisis period. The results show that the *t*-test values are not statistically significant at a 5-per cent level which suggests that the null hypothesis of an equal mean return cannot be rejected. Therefore, there is no robust statistical evidence to support that the mean return of the hypothetical portfolios in the crisis period is significantly different.

Table 7.11: Paired Sample Test – Crisis Period

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	CPRE02 - SAPRE02	.0203000	.0307005	.0125334	-.0119182	.0525182	1.620	5	.166
Pair 2	CPRE02 - NSAPRE02	-.1014833	.1701742	.0694733	-.2800702	.0771035	-1.461	5	.204
Pair 3	SAPRE02 - NSAPRE02	-.1217833	.1999519	.0816300	-.3316199	.0880533	-1.492	5	.196

7.3.1.4 Test of Mean Return – Post-Crisis Period

Table 7.12 provides the results of the paired sample *t*-test on returns of the hypothetical portfolios in the post-crisis period (2004–2008). The null hypothesis of the test states that the mean return of the portfolios in the post-crisis period is not significantly different between one another. Consequently, a rejection of the null hypothesis implies that the difference in the mean return of the portfolios in the post-crisis period is significant statistically. The results show that the *t*-test values are not statistically significant at a 5-per cent level which suggests that the null hypothesis of an equal mean return cannot be rejected. Therefore, there is no robust statistical evidence to support that the mean return of the hypothetical portfolios in the post-crisis period is significantly different.

Table 7.12: Paired Sample Test – Post-Crisis Period

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	CPRE03 - SAPRE03	.0019000	.0151298	.0067662	-.0168861	.0206861	.281	4	.793
Pair 2	CPRE03 - NSAPRE03	-.0052000	.0510296	.0228212	-.0685617	.0581617	-.228	4	.831
Pair 3	SAPRE03 - NSAPRE03	-.0071000	.0661561	.0295859	-.0892437	.0750437	-.240	4	.822

To conclude, results from the paired-sample *t*-tests indicate that there is no robust evidence to support that the observed differences in the mean returns of the hypothetical portfolios across the sample periods is significant statistically. Hence, it can be inferred from the absence of the statistical evidence that the return of SAP is not significantly different from the return of CP and SAP.

7.3.2 Analysis of the Hypothetical Portfolios' Return Correlation

The correlation analysis attempts to investigate the relationship of returns amongst the hypothetical portfolios and the benchmark index. The analysis is important as it would reveal how a portfolio's return is related to or influenced by return from another portfolio or the market index. The null hypothesis of the correlation analysis states that there is no significant correlation between returns of the hypothetical portfolios. Therefore, a rejection of the null hypothesis implies that there is evidence of correlation between the portfolios' returns whereby return of one portfolio is assumed to be significantly influenced by return of another portfolio. The correlation values ranged from −1 (indicating a perfect negative correlation) to +1 (indicating a perfect positive correlation) whilst a zero correlation value indicates no correlation between returns of the two portfolios. Results of the correlation regression for the full period sample are shown in Table 7.13.

Table 7.13: Portfolio Return Correlation – All Period

		CPRE	SAPRE	NSAPRE	KLCIRE
CPRE	Pearson	1			
	Sig. (2-tailed)				
	N	19			
SAPRE	Pearson	1.000**	1		
	Sig. (2-tailed)	.000			
	N	19	19		
NSAPRE	Pearson	.878**	.872**	1	
	Sig. (2-tailed)	.000	.000		
	N	19	19	19	
KLCIRE	Pearson	.792**	.787**	.949**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	19	19	19	19

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

The table suggests that returns of the hypothetical portfolios have a strong and significant correlation between each other as well as with the benchmark KLCI. CP and SAP have a perfect positive correlation indicating that both portfolios move in a very similar direction. One plausible reason is because the component stocks of the two portfolios are practically similar, hence their returns are bound to be closely correlated.

The high correlation level also confirms the identical performance between CP and SAP as observed in the preceding analysis. Return of SAP is also positively correlated with return of NSAP. With regards to the relationship between SAP and the overall market, return of the *Shariah*-compliant portfolio has the least correlation level with the KLCI, thus explaining the observed lag in the performance of SAP as manifested by the portfolio's performance trailing behind the benchmark's performance. On the other hand, NSAP is strongly correlated with the KLCI which explain the ability of the 'sin' portfolio to match the overall market performance. One plausible reason for the observed strong correlation between NSAP and the KLCI is because the majority of NSAP's main component stocks are also the benchmark's heavyweight stocks. Since Table 7.13 provides correlation results only for the full period sample, further analysis to determine the correlation behaviour in different market conditions was conducted. Table 7.14 gives the correlation results in the market rally period.

Table 7.14: Portfolio Return Correlation – Market Rally Period

		CPRE01	SAPRE01	NSAPRE01	KLCIRE01
CPRE01	Pearson	1			
	Sig. (2-tailed)				
	N	8			
SAPRE01	Pearson	1.000**	1		
	Sig. (2-tailed)	.000			
	N	8	8		
NSAPRE01	Pearson	.723*	.710*	1	
	Sig. (2-tailed)	.043	.048		
	N	8	8	8	
KLCIRE01	Pearson	.525	.509	.950**	1
	Sig. (2-tailed)	.182	.198	.000	
	N	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

The table shows that although CP and SAP are positively correlated with the KLCI during the market rally period, the degree of the correlation is moderate and not statistically significant. This implies that despite the performance of the two portfolios generally following the overall market performance their return was not significantly influenced by the benchmark's performance. Closer examination on the portfolios'

returns during this period reveals that the two portfolios outperformed the KLCI in terms of return but their standard deviation is three times higher than that of the benchmark index, indicating that the portfolios have substantially higher risk as compared to the KLCI. This is due to the large numbers of medium and small-capitalised stocks in the two hypothetical portfolios whose collective return could significantly influence the total return of the portfolios. On the other hand, the KLCI is solely represented by large-capitalised stocks whose returns are more stable and less volatile. During this period, return of SAP is moderately correlated with NSAP. In comparison to CP and SAP, NSAP has stronger correlation to the KLCI owing to the similarities in their major component stocks. Table 7.15 provides the correlation results during the crisis period.

Table 7.15: Portfolio Return Correlation – Crisis Period

		CPRE02	SAPRE02	NSAPRE02	KLCIRE02
CPRE02	Pearson	1			
	Sig. (2-tailed)				
	N	6			
SAPRE02	Pearson	1.000**	1		
	Sig. (2-tailed)	.000			
	N	6	6		
NSAPRE02	Pearson	.992**	.989**	1	
	Sig. (2-tailed)	.000	.000		
	N	6	6	6	
KLCIRE02	Pearson	.961**	.959**	.973**	1
	Sig. (2-tailed)	.002	.003	.001	
	N	6	6	6	6

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

The table reveals that the degree of correlation amongst the portfolios' returns and with the KLCI increased during the crisis period. A similar phenomenon is also seen in the post-crisis period as shown in Table 7.16. In fact, CP and SAP are more closely correlated with the KLCI than NSAP in the post-crisis period. This reflects a change in the performance trend of the portfolios' component stocks which during this period appeared to be dominated by large-capitalised stocks, hence the observed inclination towards the KLCI. One plausible reason is, in the absence of market boosting news or

speculative trading to push the price of medium and small-capitalised stocks as is normally the case in a market rally period, the price of these stocks will remain lacklustre which prompts investors to turn their attention to the KLCI for direction, instead. This argument is supported by the positive return posted by large-capitalised stocks in the post-crisis period against the losses suffered by medium and small-capitalised stocks, thus explaining the higher correlation level. Notwithstanding however, NSAP continue to have a strong correlation with the KLCI.

Table 7.16: Portfolio Return Correlation – Post-Crisis Period

		CPRE03	SAPRE03	NSAPRE03	KLCIRE03
CPRE03	Pearson	1			
	Sig. (2-tailed)				
	N	5			
SAPRE03	Pearson	.998**	1		
	Sig. (2-tailed)	.000			
	N	5	5		
NSAPRE03	Pearson	.972**	.954*	1	
	Sig. (2-tailed)	.006	.012		
	N	5	5	5	
KLCIRE03	Pearson	.999**	.996**	.974**	1
	Sig. (2-tailed)	.000	.000	.005	
	N	5	5	5	5

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

For comparison purposes, Table 7.17 shows the correlation between the portfolios' return and the FTSE Bursa Malaysia Emas *Shariah* Index (FBMSHA). It should be noted that the data available for FBMSHA covers a shorter period from 1999 to 2008. The results indicate that the *Shariah* index has negative but low and insignificant correlation with all the portfolios as well as the KLCI. Therefore, despite the weak statistical evidence, the results suggest that *Shariah*-compliant stocks could provide an efficient protection for portfolio value from a poor market condition. This is because most of the high-valued *Shariah*-compliant stocks are large-capitalised companies involved in plantation, properties, construction and oil-related sectors.

Table 7.17: Portfolio Correlation – Comparison with the *Shariah* Index*

		CPRE	SAPRE	NSAPRE	KLCIRE	FBMESIRE
CPRE	Pearson	1				
	Sig. (2-tailed)					
	N	9				
SAPRE	Pearson	.999**	1			
	Sig. (2-tailed)	.000				
	N	9	9			
NSAPRE	Pearson	.984**	.978**	1		
	Sig. (2-tailed)	.000	.000			
	N	9	9	9		
KLCIRE	Pearson	.987**	.984**	.980**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	9	9	9	9	
FBMESIRE	Pearson	-.278	-.256	-.376	-.319	1
	Sig. (2-tailed)	.468	.507	.319	.402	
	N	9	9	9	9	9

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Note: The FBMSHA is represented by the FBMESIRE

To conclude, the correlation analysis reveals that returns of all the portfolios are strongly and significantly correlated between one another and with the benchmark KLCI. The positive correlation implies that returns of all the portfolios are moving in a similar direction together with the overall market return. There is also evidence of varying degrees of correlation in different time periods, of which, CP and SAP are found to be more correlated with the KLCI in the crisis and post-crisis periods than in the market rally period. This is arguably because, in a poor market condition, performance of the two portfolios is dominated by large-capitalised stocks whilst in a market rally period their performance is substantially influenced by medium and small-capitalised stocks which form the majority of their component stocks. The *Shariah* index has negative but low and insignificant correlation with the portfolios and with the benchmark KLCI. Despite the weak statistical evidence, the results do suggest that *Shariah*-compliant stocks may offer an efficient protection to portfolio value by virtue of their relatively negative correlation with NSAP and the benchmark index.

7.3.3 Analysis of the Effect of Equity Size on Portfolio Performance

This section analyses the impact of equity size on the hypothetical portfolios' performance. The main objective of the analysis is to investigate the presence of the *firm size effect* which argues that size of equities in a portfolio could significantly influence the portfolio's return performance. For this purpose, the components of each of the hypothetical portfolios are divided into four categories based on the size of their market capitalisation with CP1X, SAP1X and NSAP1X series indicate portfolios consisting of stocks with the largest market capitalisation whilst CP4X, SAP4X and NSAP4X series represent portfolios comprising of stocks with the smallest market capitalisation. The analysis of the size effect is explained below.

7.3.3.1 Descriptive Analysis of the Firm Size Effect in Portfolio Performance

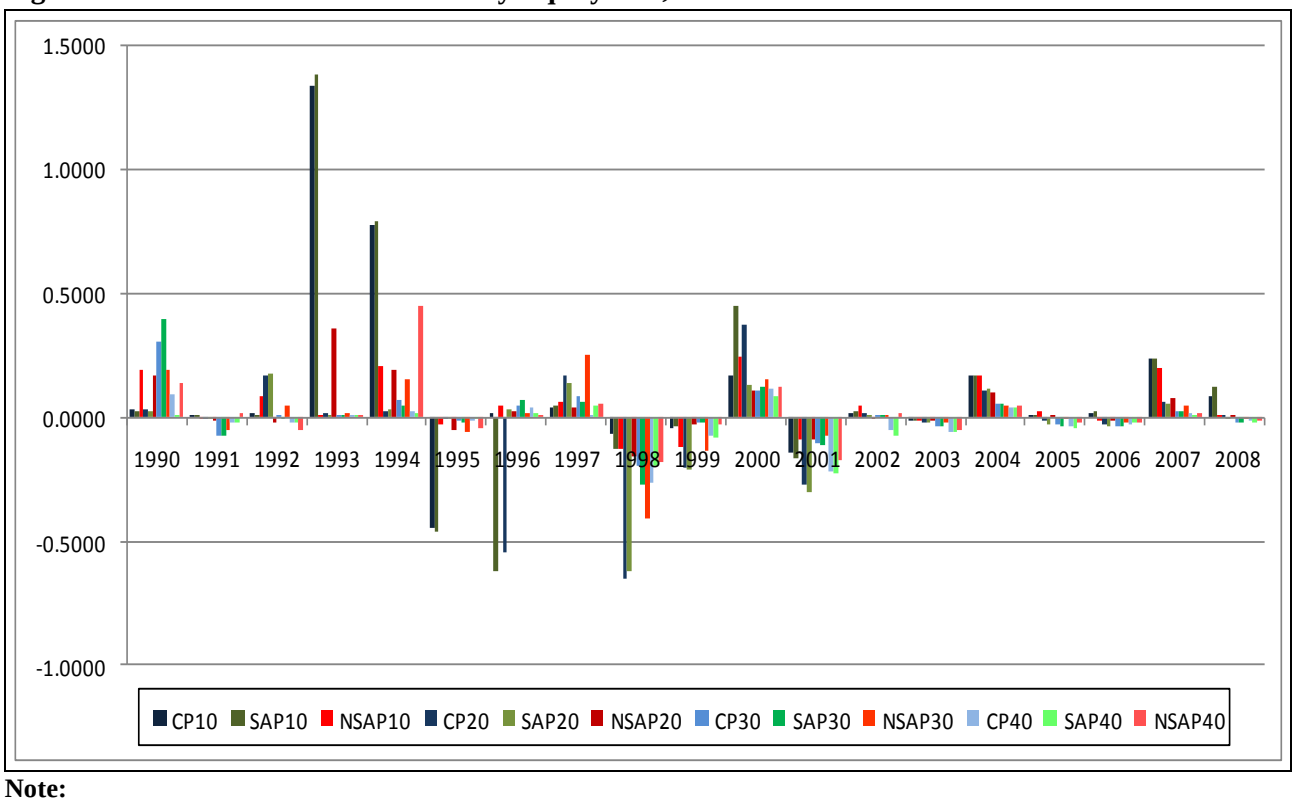
Table 7.18 presents the descriptive analysis of the portfolios' performance which is also shown graphically in Figure 7.9. The results reveal a rather interesting pattern in the performance of the portfolios and offer yet another perspective about the advantages of Islamic-based portfolio since the results suggest that the performance of SAP is superior to CP, NSAP and even the benchmark KLCI.

In the full period sample, SAP10 generated a total return of 188.56 per cent as compared to 91.93 per cent by NSAP10 and 124.55 per cent by the KLCI. The performance however, was second to CP10 which accumulated 222.66 per cent return in the same period. The annual mean return during the full period sample was 11.72 per cent, 9.92 per cent, and 4.84 per cent for CP10, SAP10 and NSAP10, respectively in comparison to 6.56 per cent return per annum for the KLCI. The overwhelming performance was particularly driven by the spectacular performance of the construction and plantation stocks which together form the main component stocks of CP and SAP against NSAP where performance relies heavily on finance, conglomerate, properties and tobacco stocks. CP however, has a slight advantage over SAP since the conventional portfolio may also invest in non-*halal*-approved large-capitalised stocks and hence, benefit significantly from such investment. This explains why return of CP is higher than return of the *Shariah*-compliant portfolio whose investment is restricted only to *halal*-approved stocks.

Table 7.18: Summary of Portfolio Return by Equity Size, 1990-2008

		CP10	SAP10	NSAP10	CP20	SAP20	NSAP20	CP30	SAP30	NSAP30	CP40	SAP40	NSAP40	KLCI00	FBMESI00
Full Period	TOTAL	2.2266	1.8856	0.9193	-0.7649	-0.5116	0.6867	0.1878	0.1545	0.1546	-0.4661	-0.5328	0.3044	1.2455	0.4829
	MEAN	0.1172	0.0992	0.0484	-0.0403	-0.0269	0.0361	0.0099	0.0081	0.0081	-0.0245	-0.0280	0.0160	0.0656	0.0254
	STD DEV	0.3617	0.4174	0.1076	0.2317	0.1779	0.1116	0.0981	0.1219	0.1361	0.0875	0.0744	0.1285	0.2848	0.1013
	VAR	0.1308	0.1742	0.0116	0.0537	0.0316	0.0125	0.0096	0.0149	0.0185	0.0077	0.0055	0.0165	0.0811	0.0103
	COVAR	0.0423	0.0511	0.0292	0.0437	0.0386	0.0220	0.0217	0.0254	0.0325	0.0217	0.0176	0.0298	0.0811	-0.0045
	BETA	0.5211	0.6301	0.3605	0.5390	0.4758	0.2707	0.2679	0.3134	0.4013	0.2677	0.2166	0.3679	1.0000	-0.0559
Market-Rally Period	TOTAL	1.7723	1.1794	0.5750	-0.1472	0.4038	0.6907	0.4352	0.4819	0.5624	0.1106	0.0493	0.5895	1.1565	0.0000
	MEAN	0.2215	0.1474	0.0719	-0.0184	0.0505	0.0863	0.0544	0.0602	0.0703	0.0138	0.0062	0.0737	0.1446	0.0000
	STD DEV	0.5250	0.6099	0.0801	0.2105	0.0653	0.1312	0.1076	0.1347	0.1080	0.0356	0.0219	0.1538	0.2217	0.0000
	VAR	0.2756	0.3720	0.0064	0.0443	0.0043	0.0172	0.0116	0.0181	0.0117	0.0013	0.0005	0.0237	0.0492	0.0000
	COVAR	0.0451	0.0477	0.0170	0.0027	0.0015	0.0143	0.0162	0.0176	0.0175	0.0053	0.0022	0.0300	0.0492	0.0000
	BETA	0.9176	0.9696	0.3465	0.0553	0.0303	0.2911	0.3291	0.3578	0.3549	0.1075	0.0455	0.6094	1.0000	0.0000
Crisis Period	TOTAL	-0.0702	0.1411	-0.0536	-0.7589	-1.0193	-0.1839	-0.2414	-0.3119	-0.4801	-0.5498	-0.5519	-0.2939	-0.6577	-0.0775
	MEAN	-0.0117	0.0235	-0.0089	-0.1265	-0.1699	-0.0306	-0.0402	-0.0520	-0.0800	-0.0916	-0.0920	-0.0490	-0.1096	-0.0129
	STD DEV	0.0959	0.2020	0.1294	0.3112	0.2479	0.0829	0.0940	0.1201	0.1717	0.1229	0.1006	0.1066	0.3665	0.1144
	VAR	0.0092	0.0408	0.0167	0.0969	0.0614	0.0069	0.0088	0.0144	0.0295	0.0151	0.0101	0.0114	0.1343	0.0131
	COVAR	0.0326	0.0710	0.0467	0.1077	0.0782	0.0289	0.0312	0.0382	0.0546	0.0418	0.0336	0.0355	0.1343	-0.0253
	BETA	0.2424	0.5290	0.3480	0.8019	0.5819	0.2155	0.2326	0.2847	0.4064	0.3112	0.2500	0.2642	1.0000	-0.1881
Post-Crisis Period	TOTAL	0.5245	0.5650	0.3979	0.1411	0.1039	0.1799	-0.0060	-0.0155	0.0723	-0.0269	-0.0302	0.0089	0.7467	0.5604
	MEAN	0.1049	0.1130	0.0796	0.0282	0.0208	0.0360	-0.0012	-0.0031	0.0145	-0.0054	-0.0060	0.0018	0.1493	0.1121
	STD DEV	0.0872	0.0848	0.0885	0.0508	0.0575	0.0464	0.0342	0.0365	0.0288	0.0289	0.0290	0.0268	0.1205	0.1140
	VAR	0.0076	0.0072	0.0078	0.0026	0.0033	0.0022	0.0012	0.0013	0.0008	0.0008	0.0008	0.0007	0.0145	0.0130
	COVAR	0.0101	0.0095	0.0101	0.0059	0.0067	0.0054	0.0039	0.0043	0.0033	0.0033	0.0033	0.0031	0.0145	0.0010
	BETA	0.6951	0.6529	0.6966	0.4072	0.4578	0.3737	0.2716	0.2934	0.2299	0.2285	0.2257	0.2127	1.0000	0.0684

Figure 7.9: Trend of Portfolio Return by Equity Size, 1990-2008



Note:

CP10, SAP10, NSAP10 – Portfolios of largest capitalised stocks.

CP40, SAP40, NSAP40 – Portfolios of smallest capitalised stocks.

Analysis based on the sub-period samples reveals that at the start of the market rally in 1990, medium and small-capitalised stocks outperformed large-capitalised stocks as shown by Figure 7.9. The strong performance was arguably driven by intense speculative interest in medium and small-capitalised stocks as investors took advantage of the relatively low prices of these stocks as compared to the usually more expensive blue-chip stocks at the early stage of the bullish market, effectively pushing the price of medium and small-capitalised stocks higher. During the market rally especially in 1992–1994 periods, large-capitalised SAP portfolio outperformed other portfolios as investors began to trade based on fundamental factors and avoided speculative trading. Cumulatively, SAP10 gained 117.94 per cent throughout the market rally period or 14.74 per cent average return per year against 57.50 per cent or 7.19 per cent return per annum generated by NSAP10.

Interestingly, the advantage of *Shariah*-compliant portfolio is very obvious in the crisis and post-crisis periods. In the crisis period, SAP's large-capitalised stocks portfolio emerged as the only portfolio which posted positive return while other portfolios suffered heavy losses, especially smaller size stocks portfolios. SAP10 gained 14.11 per cent cumulative return as compared to a total loss of 7.02 per cent for CP and 5.36 per cent for NSAP. In the post-crisis period, SAP10 remained the best performing portfolio with a cumulative return of 56.50 per cent, thus outperforming CP10 (52.4 per cent) and NSAP10 (39.79 per cent). Large-capitalised stocks in SAP did exceptionally well in 2007 and 2008. In 2008, the portfolio posted 12.44 per cent return as compared to 8.78 per cent and 0.69 per cent return from CP and NSAP, respectively. This is attributed to the strong performance by plantation stocks amid poorer performance by finance stocks in 2008. The SAP10 also outperformed both the benchmark KLCI and the *Shariah* index during the crisis and post-crisis periods.

In terms of portfolio risk, the standard deviation of the SAP's large-capitalised stocks portfolio is higher than the other portfolios which perfectly coincide with the higher return generated by the portfolio. The standard deviation for the full period sample for SAP10 is 41.74 per cent against 36.17 per cent for CP10 and 10.76 per cent for NSAP10. The portfolio risk however, shows a declining trend in the different sub-period samples. The risk is particularly high during the market rally period but moderated in the crisis and post-crisis periods. For example, the portfolio risk for SAP10

was 60.99 per cent in the market rally period, improving to 20.20 per cent and 8.48 per cent in the crisis and post-crisis periods respectively, in line with the lower profit generated during the two sub-periods. As revealed by Figure 7.9, the high standard deviation in the crisis period was partly attributable to the sharp losses suffered in the 1995, 1996 and 1998 periods. Nevertheless, the ability of the SAP's large-capitalised stocks portfolio to improve its risk level while maintaining its profitability particularly during the crisis and post-crisis periods signifies the major advantage that the *Shariah*-compliant portfolio has over conventional and sin portfolios. This clearly indicates the investment quality of large-capitalised, *Shariah*-compliant stocks as stable and defensive assets that can be utilised to safeguard portfolio value especially when the stock market turns bearish. The following section discusses the empirical analysis of the size effect.

7.3.3.2 Empirical Analysis of the Firm Size Effect in Portfolio Performance

The empirical analysis of the firm size effect involves the *t*-tests, correlation tests and ordinary least square (OLS) regression tests to investigate the relationship of the size-based portfolio return and the statistical significance of the difference in the returns of the various portfolio sizes. Table 7.19a to 7.19d provide the results of the paired sample *t*-test conducted to determine whether the mean returns of the portfolios differ significantly between each other. Since the descriptive analysis reveals that only the return of the large-capitalised portfolios gives a rather meaningful comparison between *Shariah*-compliant and non-*Shariah*-compliant portfolios, only results of the paired sample *t*-test for large-capitalised portfolios are presented. The results indicate that none of the paired portfolio returns is statistically significant in all sample periods. This further confirms the results of the previous analysis that the difference between return of *Shariah*-compliant portfolio and return of non-*Shariah*-compliant portfolio is not statistically significant.

Table 7.19a: Paired Sample T-Test (All Portfolios-Largest, Full Period)

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	CPRE10 - SAPRE10	.0179579	.1644015	.0377163	-.0612811	.0971969	.476	18	.640
Pair 2	CPRE10 - NSAPRE10	.0688053	.3520107	.0807568	-.1008584	.2384690	.852	18	.405
Pair 3	CPRE10 - KLCIRE10	.0516421	.3667340	.0841345	-.1251180	.2284022	.614	18	.547
Pair 4	SAPRE10 - NSAPRE10	.0508474	.4030119	.0924573	-.1433981	.2450929	.550	18	.589
Pair 5	SAPRE10 - KLCIRE10	.0336842	.4020586	.0922386	-.1601018	.2274703	.365	18	.719
Pair 6	NSAPRE10 - KLCIRE10	-.0171632	.1900290	.0435956	-.1087542	.0744279	-.394	18	.698

Table 7.19b: Paired Sample T-Test (All Portfolios-Largest, Market Rally Period)

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	CPRE11 - SAPRE11	.0741125	.2282876	.0807119	-.1167407	.2649657	.918	7	.389
Pair 2	CPRE11 - NSAPRE11	.1496625	.5496272	.1943226	-.3098373	.6091623	.770	7	.466
Pair 3	CPRE11 - KLCIRE11	.0769750	.5177846	.1830645	-.3559037	.5098537	.420	7	.687
Pair 4	SAPRE11 - NSAPRE11	.0755500	.6387125	.2258190	-.4584270	.6095270	.335	7	.748
Pair 5	SAPRE11 - KLCIRE11	.0028625	.6101818	.2157318	-.5072623	.5129873	.013	7	.990
Pair 6	NSAPRE11 - KLCIRE11	-.0726875	.1567672	.0554256	-.2037482	.0583732	-1.311	7	.231

Table 7.19c: Paired Sample T-Test (All Portfolios-Largest, Crisis Period)

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	CPRE12 - SAPRE12	-.0351833	.1224775	.0500012	-.1637156	.0933490	-.704	5	.513
Pair 2	CPRE12 - NSAPRE12	-.0027500	.0597214	.0243812	-.0654238	.0599238	-.113	5	.915
Pair 3	CPRE12 - KLCIRE12	.0979333	.3067249	.1252199	-.2239547	.4198214	.782	5	.470
Pair 4	SAPRE12 - NSAPRE12	.0324333	.0984090	.0401753	-.0708406	.1357072	.807	5	.456
Pair 5	SAPRE12 - KLCIRE12	.1331167	.1991454	.0813008	-.0758736	.3421069	1.637	5	.162
Pair 6	NSAPRE12 - KLCIRE12	.1006833	.2628951	.1073265	-.1752082	.3765749	.938	5	.391

Table 7.19d: Paired Sample T-Test (All Portfolios-Largest, Post-Crisis Period)

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	CPRE13 - SAPRE13	-.0081200	.0167327	.0074831	-.0288963	.0126563	-1.085	4	.339
Pair 2	CPRE13 - NSAPRE13	.0253000	.0369320	.0165165	-.0205572	.0711572	1.532	4	.200
Pair 3	CPRE13 - KLCIRE13	-.0444400	.0490709	.0219452	-.1053696	.0164896	-2.025	4	.113
Pair 4	SAPRE13 - NSAPRE13	.0334200	.0524461	.0234546	-.0317005	.0985405	1.425	4	.227
Pair 5	SAPRE13 - KLCIRE13	-.0363200	.0586282	.0262193	-.1091165	.0364765	-1.385	4	.238
Pair 6	NSAPRE13 - KLCIRE13	-.0697400	.0514419	.0230055	-.1336135	-.0058665	-3.031	4	.039

Tables 7.20 to 7.22 show the results of the correlation tests on returns of each of the hypothetical portfolios based on different equity sizes. Results of the correlation tests for CP, shown in Table 7.20, indicate that return of the largest stocks portfolio (CP10) *is* positively correlated with the other portfolios as well as with the benchmark index but the degree of correlation is weak and insignificant. Return of the medium and small-capitalised portfolios however, are positively and significantly correlated between the portfolios and with the KLCI. A similar correlation pattern is also found in SAP as shown in Table 7.21. The insignificant correlation between the return of the large-capitalised portfolio with return of the other portfolios is consistent with the superior performance of the large-capitalised portfolio against the other portfolios throughout the period. Hence, while the performance of medium and small-capitalised stocks tend to move in similar direction at the influence of the overall market, performance of the large-capitalised stocks have not been significantly affected by the general market, as proven by the ability of the large-capitalised portfolio to generate positive return despite losses incurred by the other portfolios and the index. This implies that large-capitalised stocks are better choices than medium and small- capitalised stocks.

Table 7.20: CP Return Correlation based on Portfolio Size (All Period)

		CP10	CP20	CP30	CP40	KLCI
CP10	Pearson	1				
	Sig. (2-tailed)					
	N	19				
CP20	Pearson	.202	1			
	Sig. (2-tailed)	.407				
	N	19	19			
CP30	Pearson	.181	.502*	1		
	Sig. (2-tailed)	.457	.028			
	N	19	19	19		
CP40	Pearson	.268	.664**	.820**	1	
	Sig. (2-tailed)	.268	.002	.000		
	N	19	19	19	19	
KLCI	Pearson	.410	.662**	.777**	.871**	1
	Sig. (2-tailed)	.081	.002	.000	.000	
	N	19	19	19	19	19

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 7.21: SAP Return Correlation based on Portfolio Size (All Period)

		SAP10	SAP20	SAP30	SAP40	KLCI
SAP10	Pearson	1				
	Sig. (2-tailed)					
	N	19				
SAP20	Pearson	.213	1			
	Sig. (2-tailed)	.381				
	N	19	19			
SAP30	Pearson	.124	.633**	1		
	Sig. (2-tailed)	.613	.004			
	N	19	19	19		
SAP40	Pearson	.284	.861**	.645**	1	
	Sig. (2-tailed)	.239	.000	.003		
	N	19	19	19	19	
KLCI	Pearson	.430	.762**	.732**	.829**	1
	Sig. (2-tailed)	.066	.000	.000	.000	
	N	19	19	19	19	19

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

The correlation results for NSAP shown in Table 7.22 reveal that returns among all the portfolios and the benchmark index are positively and significantly correlated. The strong correlation signifies that the portfolio's component stocks are performing in a similar direction and influenced by the benchmark's performance. The portfolio's large-capitalised stocks have a very strong positive and significant correlation with the KLCI. This is due to a majority of the non-*Shariah*-compliant large-capitalised stocks particularly those of finance; gaming and conglomerate stocks are also the benchmark's heavyweight component stocks. The significantly high correlation between the NSAP's large-capitalised stocks and the key index can also be explained by the fact that finance sector is a cyclical industry in which performance is normally subject to ever-changing business or economic cycles. Therefore, since return from finance-related stocks constituted the bulk of the NSAP's return, it can be expected that the performance of the large-capitalised stocks portfolio will be paralleled with the performance of the general market.

Table 7.22: NSAP Return Correlation based on Portfolio Size (All Period)

		NSAP10	NSAP20	NSAP30	NSAP40	KLCI
NSAP10	Pearson	1				
	Sig. (2-tailed)					
	N	19				
NSAP20	Pearson	.608**	1			
	Sig. (2-tailed)	.006				
	N	19	19			
NSAP30	Pearson	.767**	.612**	1		
	Sig. (2-tailed)	.000	.005			
	N	19	19	19		
NSAP40	Pearson	.725**	.641**	.667**	1	
	Sig. (2-tailed)	.000	.003	.002		
	N	19	19	19	19	
KLCI	Pearson	.954**	.691**	.840**	.815**	1
	Sig. (2-tailed)	.000	.001	.000	.000	
	N	19	19	19	19	19

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

While the descriptive analysis and the correlation analysis already indicate there is a relationship between equity size and portfolio return, the firm size effect is further analysed using OLS regression methods. However, prior to performing the OLS regression, data of each of the hypothetical portfolios' returns from different equity sizes are tested for their stationarity using the Augmented Dickey-Fuller (ADF) unit root test. The unit root test results are shown in Table 7.23. It is evident from the table that the absolute value of all the ADF test statistics is larger than the absolute value of their corresponding critical ADF statistics at 5-per cent significant level for all portfolios. Therefore, the null hypothesis which states that the data contains unit root (non-stationary) is rejected in favour of the alternative hypothesis which states that the data is stationary, instead. As all the data is proven stationary, the analysis of the firm size effect can now proceed with the OLS regression analysis.

Table 7.23: Unit Root Test Results

Portfolios/Index	ADF Test Statistic	95% critical value for the ADF statistic	Decision
Conventional – Largest (CP10)	-3.9689	-3.7119	Reject H_o i.e. data is stationary
Conventional – Medium (CP20)	-5.0558	-3.7119	Reject H_o i.e. data is stationary
Conventional – Small (CP30)	-5.0482	-3.7119	Reject H_o i.e. data is stationary
Conventional – Smallest (CP40)	-4.4839	-3.7119	Reject H_o i.e. data is stationary
Conventional – Total Return (CP)	-3.8896	-3.6921	Reject H_o i.e. data is stationary
Shariah-Approved – Largest (SAP10)	-3.8776	-3.7119	Reject H_o i.e. data is stationary
Shariah-Approved – Medium (SAP20)	-4.0306	-3.7119	Reject H_o i.e. data is stationary
Shariah-Approved – Small (SAP30)	-4.6708	-3.7119	Reject H_o i.e. data is stationary
Shariah-Approved – Smallest (SAP40)	-4.4424	-3.7119	Reject H_o i.e. data is stationary
Shariah-Approved – Total Return (SAP)	-3.8741	-3.6921	Reject H_o i.e. data is stationary
Non-Shariah-Approved – Largest (NSAP10)	-5.7642	-3.7119	Reject H_o i.e. data is stationary
Non-Shariah-Approved – Medium (NSAP20)	-3.9059	-3.7119	Reject H_o i.e. data is stationary
Non-Shariah-Approved – Small (NSAP30)	-4.4874	-3.7119	Reject H_o i.e. data is stationary
Non-Shariah-Approved – Smallest (NSAP40)	-4.7517	-3.7119	Reject H_o i.e. data is stationary
Non-Shariah-Approved – Total Return (NSAP)	-4.9470	-3.6921	Reject H_o i.e. data is stationary
Kuala Lumpur Composite Index (KLCI)	-5.3574	-3.6921	Reject H_o i.e. data is stationary

Regression results incorporating dummy variables used to examine the firm size effect on portfolio return based on Equation 6.20 are presented in Table 7.24. The table shows that the statistical parameters of the regression results have not been violated, thus allowing for inference to be made. The results reveal that return from large-capitalised stocks portfolio of CP and SAP, in particular, is bigger than the other types of portfolio sizes, hence implying the existence of size effect favouring large-capitalised stocks. For CP, the mean return for large-capitalised stocks is 21.54 per cent against medium-capitalised stocks (2.18 per cent), small-capitalised stocks (−14.20 per cent) and smallest-capitalised stocks (18.47 per cent). For SAP, the mean return of large-capitalised stocks is 19.76 per cent against medium-capitalised stocks (0.59 per cent), small-capitalised stocks (−14.83 per cent) and smallest-capitalised stocks (18.34 per cent). Size effect is also observed in NSAP but the effect is not as obvious as in CP or SAP. Unfortunately however, none of the dummy coefficients is statistically significant, whilst the R^2 of the regressions is considered too small to support that the regression equation is fit to represent the relationship of the different equity sizes with portfolio return, hence proof of the size effect. Therefore, although the dummy coefficients indicate the presence of firm size effect favouring large-capitalised stocks, the evidence is not robust statistically and is

deemed rather weak to infer that return of the large-capitalised stocks portfolio is superior to the return of medium and smaller stocks portfolios.

Table 7.24: Regression Results of Size-Based Portfolio Return with Dummy Variables

$R_{it} = \beta_1 + \beta_2 D_{2it} + \beta_3 D_{3it} + \beta_4 D_{4it} + \varepsilon_{it}$

CP_t	=	0.2154	-	0.1936$CP20_t$	-	0.3574$CP30_t$	-	0.0307$CP40_t$	+ ε_t
		(*se* = 0.3129)		(*se* = 0.4198)		(*se* = 0.4198)		(*se* = 0.4198)	
		(*t* = 0.6884)		(*t* = -0.4613)		(*t* = -0.8514)		(*t* = -0.0732)	
		(*p-val* = 0.502)		(*p-val* = 0.651)		(*p-val* = 0.408)		(*p-val* = 0.943)	
		R^2 = 0.0616		*F* = 0.3282		*DW* = 1.8899			
SAP_t	=	0.1976	-	0.1917$SAP20_t$	-	0.3459$SAP30_t$	-	0.0142$SAP40_t$	+ ε_t
		(*se* = 0.3233)		(*se* = 0.4337)		(*se* = 0.4337)		(*se* = 0.4337)	
		(*t* = 0.6113)		(*t* = -0.4420)		(*t* = -0.7975)		(*t* = -0.0327)	
		(*p-val* = 0.550)		(*p-val* = 0.665)		(*p-val* = 0.438)		(*p-val* = 0.974)	
		R^2 = 0.0575		*F* = 0.3049		*DW* = 1.8892			
$NSAP_t$	=	0.0972	+	0.0658$NSAP20_t$	-	0.1563$NSAP30_t$	+	0.1342$NSAP40_t$	+ ε_t
		(*se* = 0.2282)		(*se* = 0.3061)		(*se* = 0.3061)		(*se* = 0.3061)	
		(*t* = 0.4259)		(*t* = 0.2150)		(*t* = -0.5105)		(*t* = 0.4384)	
		(*p-val* = 0.676)		(*p-val* = 0.833)		(*p-val* = 0.617)		(*p-val* = 0.667)	
		R^2 = 0.0689		*F* = 0.3702		*DW* = 2.1761			

Results from Equation 6.21 involving a direct regression between the respective portfolio's annual return with return from their different portfolio sizes are shown in Table 7.25. As none of the statistical parameters has been violated, inferences can now be derived from the regression outputs. By invoking a greater tolerance level, the results provide a much stronger evidence of the size effect particularly for CP and SAP portfolios since return from the large-capitalised stocks portfolio appears to be statistically significant albeit at a lower significance level of around 10 per cent, whilst return for the other equity sizes in the two portfolios are not statistically significant. The R^2 of around 34 per cent is considered acceptable to indicate that the regression model is fairly fit to properly explain the size-based return relationship. A more robust result is found in NSAP with return of the large-capitalised portfolio having the highest significance level whilst the R^2 is also high at around 87 per cent. Hence, the size effect favouring large-capitalised stocks has been partly confirmed by this regression.

Table 7.25: Regression Results of Size-Based Portfolio Return

$R_{it} = \beta_1 + \beta_2 X_{Largest2it} + \beta_3 X_{Medium3it} + \beta_4 X_{Small4it} + \beta_5 X_{Smallest5it} + \varepsilon_{it}$

CP_t	=	0.0332	+	1.2502$CP10_t$	+	2.2556$CP20_t$	+	4.2596$CP30_t$	+	3.5810$CP40_t$ + ε_t
		(*se* = 0.1460)		(*se* = 0.7212)		(*se* = 2.5986)		(*se* = 4.4919)		(*se* = 2.5765)
		(*t* = 0.2275)		(*t* = 1.7336)		(*t* = 0.8680)		(*t* = 0.9483)		(*t* = 1.3898)
		(*p-val* = 0.823)		(*p-val* = 0.105)		(*p-val* = 0.400)		(*p-val* = 0.359)		(*p-val* =0.186)
				R^2 = 0.3365		*F* = 1.7749		*DW* = 2.0261		
SAP_t	=	0.0302	+	1.3081$SAP10_t$	+	2.1572$SAP20_t$	+	3.0111$SAP30_t$	+	3.7445$SAP40_t$ + ε_t
		(*se* = 0.1469)		(*se* = 0.7108)		(*se* = 2.5699)		(*se* = 3.9262)		(*se* = 2.4519)
		(*t* = 0.2055)		(*t* = 1.8402)		(*t* = 0.8394)		(*t* = 0.7669)		(*t* = 1.5272)
		(*p-val* = 0.840)		(*p-val* = 0.087)		(*p-val* = 0.415)		(*p-val* = 0.456)		(*p-val* =0.149)
				R^2 = 0. 3473		*F* = 1.8620		*DW* = 1.8992		
$NSAP_t$	=	0.0026	+	4.6577$NSAP10_t$	+	4.7195$NSAP20_t$	+	4.2468$NSAP30_t$	+	3.0010$NSAP40_t$ + ε_t
		(*se* = 0.0457)		(*se* = 0.5900)		(*se* = 1.7443)		(*se* = 1.1355)		(*se* = 0.9703)
		(*t* = 0.0568)		(*t* = 7.8945)		(*t* = 2.7056)		(*t* = 3.7400)		(*t* = 3.0930)
		(*p-val* = 0.956)		(*p-val* = 0.000)		(*p-val* = 0.017)		(*p-val* =0.002)		(*p-val* =0.008)
				R^2 = 0.8692		*F* = 23.2641		*DW* = 2.1159		

To conclude, casual observation of the portfolio performance based on different equity sizes signifies the presence of the size effect in portfolio performance. It appears that *Shariah*-compliant portfolio consisting of large-capitalised stocks is not only superior to its sister portfolios of medium and smaller size equities but is also superior to conventional and sin portfolios as well as the benchmark index. Interestingly, the sheer advantage of *Shariah*-compliant large-capitalised stocks portfolio is even more evident during unfavourable market conditions. Therefore, the findings have supported the general perception that Islamic funds could outperform conventional funds particularly in a bearish stock market condition, thus making the funds a better choice for defensive investment. However, the empirical analysis reveals that although there is evidence of superior performance by large-capitalised stocks, the size effect is not robust statistically. The test of mean return implies that there is no significant difference in the return generated by large-capitalised stocks with return from medium or smaller size stocks portfolios. The correlation results indicate that return of the large-capitalised stocks in CP and SAP have low and insignificant correlation level with return of the other equity sizes portfolios as well as with the benchmark index, thus suggesting that the large-capitalised stocks portfolio is less influenced by the general market performance. This is due particularly to the strong performance of plantation stocks which has contributed substantially to the profit of the large-capitalised stocks portfolio of CP and SAP

especially during crisis and post-crisis periods. The regression results applying dummy variables to capture the size effect also reveal that the large-capitalised stocks portfolios of CP and SAP are superior to medium and smaller-capitalised stocks portfolios. However, since the coefficients are not statistically significant, the statistical evidence is rather inconclusive and should be interpreted cautiously.

7.3.4 Analysis of Portfolio Return Volatility

This section examines the portfolio return volatility by measuring the beta of the hypothetical portfolios. This analysis is necessary to determine how the portfolios would react to the changes in the overall market condition. The main objective is to analyse the nature of the portfolios' return volatility and to determine whether there is a significant difference between *Shariah*-compliant portfolio and conventional portfolio in terms of their return volatility. For the purpose of this study, the portfolio beta is calculated based on Equation 6.22 and the results are presented in Table 7.26 to Table 7.29.

Table 7.26: Portfolio Beta in the Full Period

CP_t	=	– 0.0423	+	$1.5957KLCI_t$	+	ε_t
		(*se* = 0.0872)		(*se* = 0.2985)		
		(*t* = -0.4851)		(*t* = 5.3455)		
		(*p-val* = 0.634)		(*p-val* = 0.000)		
		R^2 = 0.6270		*F* = 28.5740		*DW* = 1.8843
SAP_t	=	– 0.0548	+	$1.6359KLCI_t$	+	ε_t
		(*se* = 0.0908)		(*se* = 0.3107)		
		(*t* = -0.6039)		(*t* = 5.2653)		
		(*p-val* = 0.554)		(*p-val* = 0.000)		
		R^2 = 0.6199		*F* = 27.7236		*DW* = 1.8877
$NSAP_t$	=	0.0169	+	$1.4003KLCI_t$	+	ε_t
		(*se* = 0.0329)		(*se* = 0.1127)		
		(*t* = 0.5128)		(*t* = 12.4256)		
		(*p-val* = 0.615)		(*p-val* = 0.000)		
		R^2 = 0.9008		*F* = 154.3944		*DW* = 2.0027

Table 7.26 above gives the portfolios' beta in the full period sample. The results show that none of the statistical parameters is violated and all of the beta coefficients are statistically significant, thus allowing for inference to be made. In relation to the overall

market's performance as proxied by the benchmark KLCI, SAP emerged as the most volatile portfolio with a beta of 1.64 times as compared to CP (1.60 times) and NSAP (1.40 times). This is attributed to the SAP's component stocks which comprise of various positively correlated sectors as well as the large number of medium and small-capitalised stocks. The strong positive correlation between the returns of SAP and KLCI also contribute to the high volatility. CP is the second most volatile portfolio due to the similarity in its component stocks with the SAP but the presence of several uncorrelated, large-capitalised but non-*halal* heavyweight stocks helped to reduce the portfolio's volatility. On the other hand, NSAP has the lowest volatility as the portfolio's main component stocks are made up of various high-yielding, uncorrelated sectors. Nevertheless, the lower R^2 for CP and SAP relative to the R^2 of NSAP indicates that KLCI alone is not the best predictor for the two portfolios in line with their relatively lower correlation with the benchmark index.

Table 7.27: Portfolio Beta in the Market Rally Period

CP_t	=	0.0676	+	$1.4094KLCI_t$	+	ε_t
		(*se* = 0.2471)		(*se* = 0.9334)		
		(*t* = 0.2737)		(*t* = 1.5099)		
		(*p-val* = 0.794)		(*p-val* = 0.182)		
		R^2 = 0.2754		*F* = 2.2798		*DW* = 1.7444
SAP_t	=	0.0614	+	$1.4033KLCI_t$	+	ε_t
		(*se* = 0.2567)		(*se* = 0.9696)		
		(*t* = 0.2394)		(*t* = 1.4473)		
		(*p-val* = 0.819)		(*p-val* = 0.198)		
		R^2 = 0.2588		*F* = 2.0946		*DW* = 1.7236
$NSAP_t$	=	0.0675	+	$1.6014KLCI_t$	+	ε_t
		(*se* = 0.0560)		(*se* = 0.2117)		
		(*t* = 1.2038)		(*t* = 7.5644)		
		(*p-val* = 0.274)		(*p-val* = 0.000)		
		R^2 = 0.9051		*F* = 57.2207		*DW* = 2.5255

The portfolios' beta during the market rally period is shown in Table 7.27 above. The results indicate that none of the statistical parameters is violated but only NSAP has a statistically significant beta and a high R^2 value, whilst beta for CP and SAP is not statistically significant and both have a fairly low R^2 value. Consequently, inference based on these results should be made with caution. SAP and CP have lower beta than NSAP due to the construction sector, which is the major contributor to the portfolios'

return during this period, is not strongly and not significantly correlated with the KLCI, hence the portfolios' performances have not been heavily affected by the overall market's volatility during the market rally period. With a statistically significant beta of 1.60 times, NSAP emerges as the most volatile portfolio during the market rally period which is in-line with the fact that the sin portfolio is the best performing portfolio during the bullish market enjoying the highest profit among the three portfolios.

Table 7.28: Portfolio Beta in the Crisis Period

CP_t	=	- 0.0960	+	$1.5881 KLCI_t$	+	ε_t
		(*se* = 0.0874)		(*se* = 0.2285)		
		(*t* = -1.0978)		(*t* = 6.9491)		
		(*p-val* = 0.334)		(*p-val* = 0.002)		
		R^2 = 0.9235		*F* = 48.2902		*DW* = 2.5882
SAP_t	=	- 0.1100	+	$1.6454 KLCI_t$	+	ε_t
		(*se* = 0.0935)		(*se* = 0.2444)		
		(*t* = -1.1765)		(*t* = 6.7331)		
		(*p-val* = 0.305)		(*p-val* = 0.003)		
		R^2 = 0.9189		*F* = 45.3353		*DW* = 2.5996
$NSAP_t$	=	- 0.0333	+	$1.2340 KLCI_t$	+	ε_t
		(*se* = 0.0560)		(*se* = 0.1463)		
		(*t* = -0.5951)		(*t* = 8.4354)		
		(*p-val* = 0.584)		(*p-val* = 0.001)		
		R^2 = 0.9468		*F* = 71.1564		*DW* = 2.2183

Table 7.28 above provides portfolio beta during the crisis period. The results show that none of the statistical parameters is violated and all of the beta coefficients are statistically significant, thus allowing for inference to be made. Comparatively, SAP is the most volatile portfolio with a beta of 1.65 times against CP (1.59 times) and NSAP (1.23 times). The higher beta for SAP in the crisis period is attributed to the dismal performance of its medium and small-capitalised stocks which constitute the majority of the SAP's component stocks and they are strongly correlated with the KLCI. It was the poor performance of these stocks that significantly undermined the stronger but less correlated return of the large-capitalised stocks in the portfolio. NSAP has the lowest beta which implies a more stable trading in this portfolio. One plausible explanation is that the tobacco sector has provided a considerable cushion to the portfolio's volatility, whilst the other major contributing sectors in the portfolio, with exception of the finance sector which is highly volatile, are less volatile and have low correlation with each other and with the benchmark index. The high R^2 during this period indicates that trading

activities, hence the portfolios' performances, are tracking the KLCI's movement closely as investors traded cautiously and looked to the benchmark index for direction.

Table 7.29: Portfolio Beta in the Post-Crisis Period

CP_t	=	- 0.1128	+	$1.6027KLCI_t$	+	ε_t
		(*se* = 0.0063)		(*se* = 0.0329)		
		(*t* = -17.8672)		(*t* = 48.7277)		
		(*p-val* = 0.000)		(*p-val* = 0.000)		
		R^2 = 0.9987		*F* = 2374.4		*DW* = 1.8559
SAP_t	=	- 0.1188	+	$1.6300KLCI_t$	+	ε_t
		(*se* = 0.0155)		(*se* = 0.0807)		
		(*t* = -7.6667)		(*t* = 20.1934)		
		(*p-val* = 0.005)		(*p-val* = 0.000)		
		R^2 = 0.9927		*F* = 407.7715		*DW* = 2.4909
$NSAP_t$	=	- 0.0942	+	$1.5129KLCI_t$	+	ε_t
		(*se* = 0.0389)		(*se* = 0.2028)		
		(*t* = -2.4199)		(*t* = 7.4610)		
		(*p-val* = 0.094)		(*p-val* = 0.005)		
		R^2 = 0.9489		*F* = 55.6663		*DW* = 1.6789

The portfolios' beta in the post-crisis period is shown in Table 7.29 above. The results show that none of the statistical parameters is violated and all of the beta coefficients are statistically significant, thus allowing for inference to be made. In relation to the KLCI, all three portfolios have a high and significant beta, implying that trading was fairly volatile during the post-crisis period. One plausible reason is because, when the general market sentiment turned lacklustre due to the absence of market boosting news, as in the case of the post-crisis period, trading activities, particularly for medium and small-capitalised stocks will closely follow the benchmark index performance. This is reflected by the strong positive correlation between the portfolios and the KLCI in the post-crisis period as well as the significantly high R^2 of the regressions. With a beta of 1.63 times, SAP is the most volatile portfolio since its performance is once again skewed by the poor but highly correlated return of small-capitalised stocks despite strong performance by its large and medium-capitalised stocks. Nevertheless, SAP is the best performing portfolio as it posted the most recovery from the huge losses incurred during the crisis period. With a beta of 1.51 times, NSAP has the lowest volatility which is attributed to the encouraging performance of its main component sectors, the majority of which have low correlation among each other although they are positively correlated with the benchmark KLCI.

To conclude, analysis of the portfolio volatility reveals that in general the performance of the three portfolios is more volatile than the performance of the benchmark index. SAP emerged as the most volatile portfolio when compared to CP and NSAP since it is dominated by sectors which are positively correlated between one another and with the KLCI. In addition, the majority of the *Shariah*-compliant portfolio's component stocks comprise of medium and small-capitalised stocks whose performance is highly volatile which could significantly affect the portfolio's total collective return. During the market rally period, SAP's beta is the lowest among the portfolios in line with the lower return generated by the *Shariah*-compliant portfolio relative to CP and NSAP. The lower beta is also attributed to the strong performance of the construction sector which, in turn, is not significantly correlated with the KLCI. During the crisis and post-crisis period, SAP has the highest beta due to its performance being adversely affected by small-capitalised stocks despite the positive return generated by its large and medium-capitalised stocks. Notwithstanding however, in comparison to CP and NSAP, SAP is arguably the best performing portfolio since it made the most recovery for the losses incurred during the crisis period. For CP, the portfolio generally has beta lower than SAP but higher than NSAP. This is attributed to CP having similar portfolio composition structure to SAP while the presence of high-yielding and less volatile non-*halal* heavyweight stocks helped reduce its portfolio's volatility. NSAP has the lowest beta among the portfolios, thus implying that trading in this portfolio is relatively less volatile. This reflects that the portfolio has enjoyed the most benefit from its diversification since, excepting its finance-related stocks which are highly correlated with the KLCI, its other major component stocks are high-yielding, less correlated heavyweight stocks. The high R^2 level in the crisis and post-crisis periods signifies that trading during these periods is significantly influenced by the overall market's performance as investors relied heavily on the KLCI for direction hence the portfolios' performance tracked the benchmark's movement closely resulting in the high betas.

7.3.5 Analysis of the Hypothetical Portfolios' Performance Based on the Traditional Portfolio Performance Measurement Models

This section analyses the hypothetical portfolios' performance using the standard portfolio performance valuation models namely the Sharpe Index (Equation 6.23), the

Treynor Index (Equation 6.24) and the Jensen-*alpha* Index (Equation 6.25). The analysis is important as the traditional portfolio measurement models allow the portfolios' performance to be analysed based on their risk-adjusted return and enables for the ranking of the portfolios according to their performance. Since past studies suggest that the analysis of Islamic fund performance is also sensitive to the benchmark used, this analysis examines the performance of the portfolios using both conventional and *Shariah*-compliant benchmark instruments. The first part of this section evaluates the hypothetical portfolios' performance using conventional benchmarks whilst the second part of this section analyses the hypothetical portfolios' performance using *Shariah*-compliant benchmark instruments.

7.3.5.1 Portfolio Performance Valuation Using Conventional Benchmark Instruments

Table 7.30 shows the results of the Sharpe Index and the Treynor Index including the portfolio ranking determined based on the two measures. Apart from the full period sample, the analysis also looks into the portfolio performance in each sub-period to investigate the impact of the market condition on the portfolios' performance and their ranking. To give a clearer understanding, the results are also presented graphically as shown in Figures 7.10 to 7.13 for both the Sharpe and Treynor measures, respectively. The figures allow for a quick judgement of the portfolios' performance by simply looking at the position of the portfolios against their respective market line.

The results of the Sharpe Index and Treynor Index shown in Table 7.30 indicate that SAP underperformed both CP and NSAP in all period samples. The *Shariah*-compliant portfolio has the lowest Sharpe Index and the lowest Treynor Index in comparison to the unrestricted portfolios. In relation to the benchmark performance, all portfolios outperformed the market portfolio only in the market rally period but underperformed during the crisis and post-crisis periods. SAP is also consistently ranked lower than NSAP and CP by both the Sharpe Index and the Treynor Index. The graphs depicting the portfolios' performance as shown by Figures 7.10 to 7.13 give a visual confirmation to the results of the Sharpe Index and the Treynor Index. With exception of the market rally period when all portfolios are located above their respective market lines

(CML and SML)[21], the portfolios lie below their market lines in the full period, the crisis and post-crisis periods indicating that they have underperformed the market portfolio during these periods. Therefore, the results from both the Sharpe Index and the Treynor Index signify that the *Shariah*-compliant portfolio is unable to outperform either the conventional portfolio or the market portfolio.

Table 7.30: Portfolio Performance & Ranking Based on the Sharpe and Treynor Measures

	$\bar{R}_i$ (%)	σ_i (%)	β_i (x)	$\bar{R}_f$ (%)	Sharpe Index	Treynor Index	Sharpe Ranking	Treynor Ranking
(A) Full Period (1990-2008)								
CP	6.23	57.39	1.5957	4.63	0.0279	1.0027	2	2
SAP	5.24	59.17	1.6359	4.63	0.0103	0.3729	3	3
NSAP	10.87	42.02	1.4003	4.63	0.1485	4.4562	1	1
KLCI	6.56	28.48	1.0000	4.63	0.0678	1.9300		
(B) Market Rally Period (1990-1997)								
CP	27.14	59.56	1.4094	6.24	0.3509	14.8290	2	2
SAP	26.43	61.17	1.4033	6.24	0.3301	14.3875	3	3
NSAP	30.22	37.41	1.6014	6.24	0.6410	14.9744	1	1
KLCI	14.46	22.17	1.0000	6.24	0.3708	8.2200		
(C) Crisis Period (1998-2003)								
CP	-27.00	60.57	1.5881	3.77	-0.5080	-19.3754	2	2
SAP	-29.03	62.91	1.6454	3.77	-0.5214	-19.9344	3	3
NSAP	-16.86	46.48	1.2340	3.77	-0.4438	-16.7180	1	1
KLCI	-10.96	36.65	1.0000	3.77	-0.4019	-14.7300		
(D) Post-Crisis Period (2004-2008)								
CP	12.65	19.33	1.6027	3.07	0.4956	5.9774	2	2
SAP	12.46	19.72	1.6300	3.07	0.4762	5.7607	3	3
NSAP	13.18	18.72	1.5129	3.07	0.5401	6.6825	1	1
KLCI	14.93	12.05	1.0000	3.07	0.9842	11.8600		

[21] CML – Capital Market Line; SML – Security Market Line

Figure 7.10: Risk-Adjusted Return Performance (Full Period)

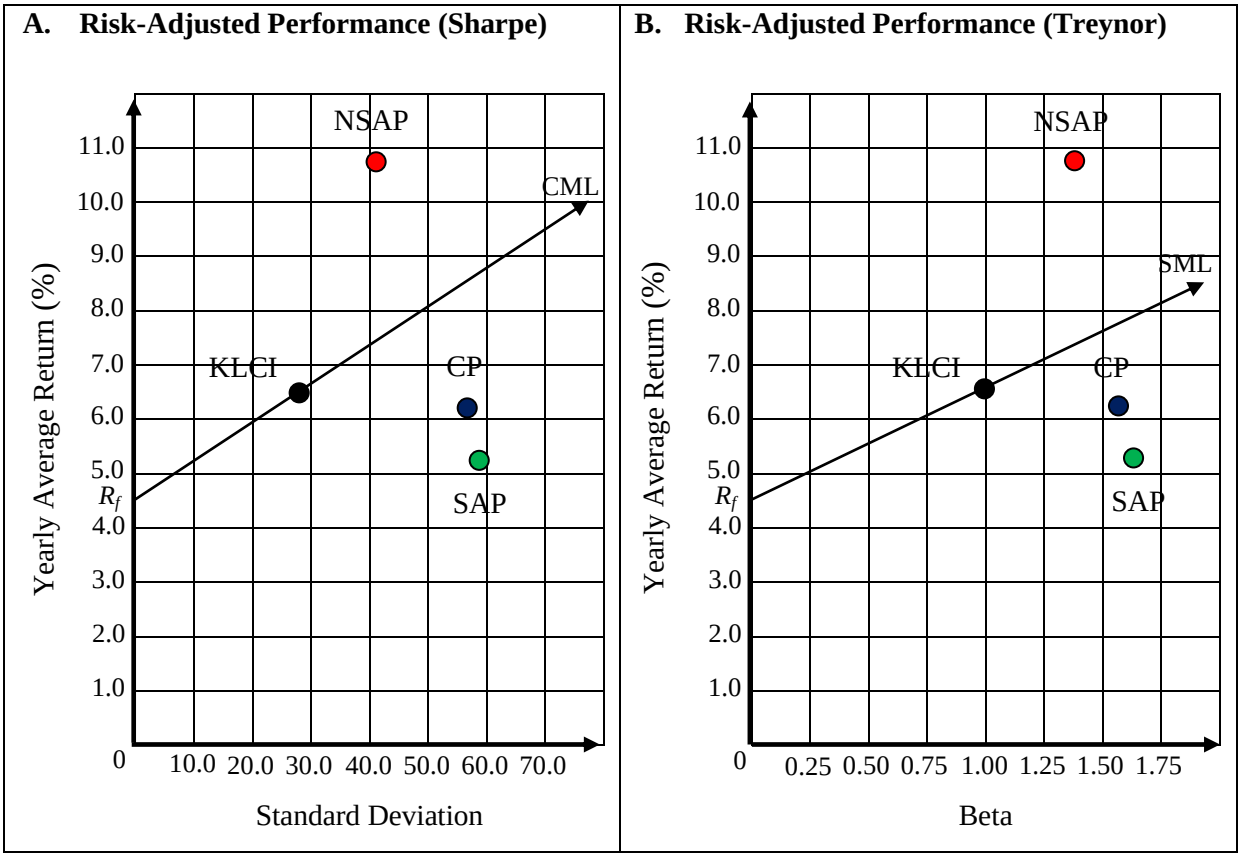


Figure 7.11: Risk-Adjusted Return Performance (Market Rally Period)

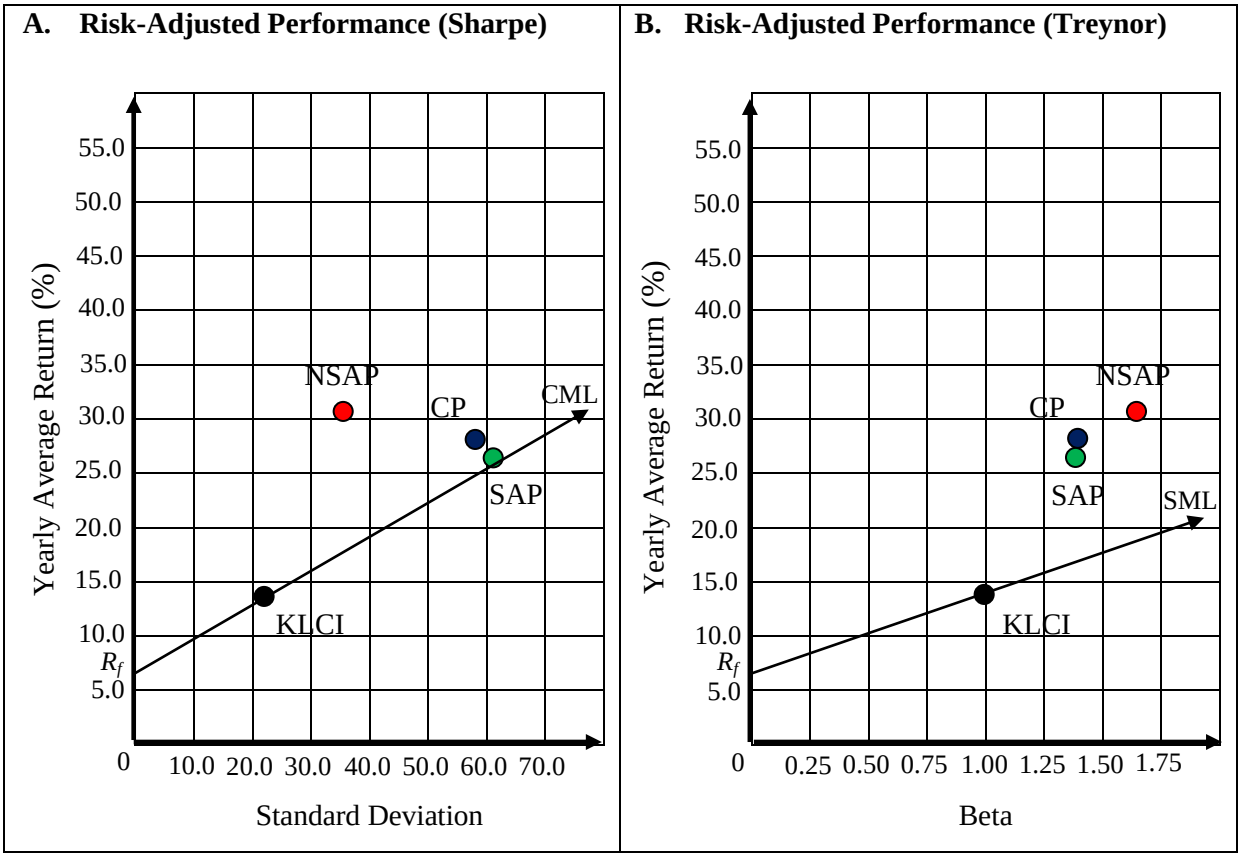


Figure 7.12: Risk-Adjusted Return Performance (Crisis Period)

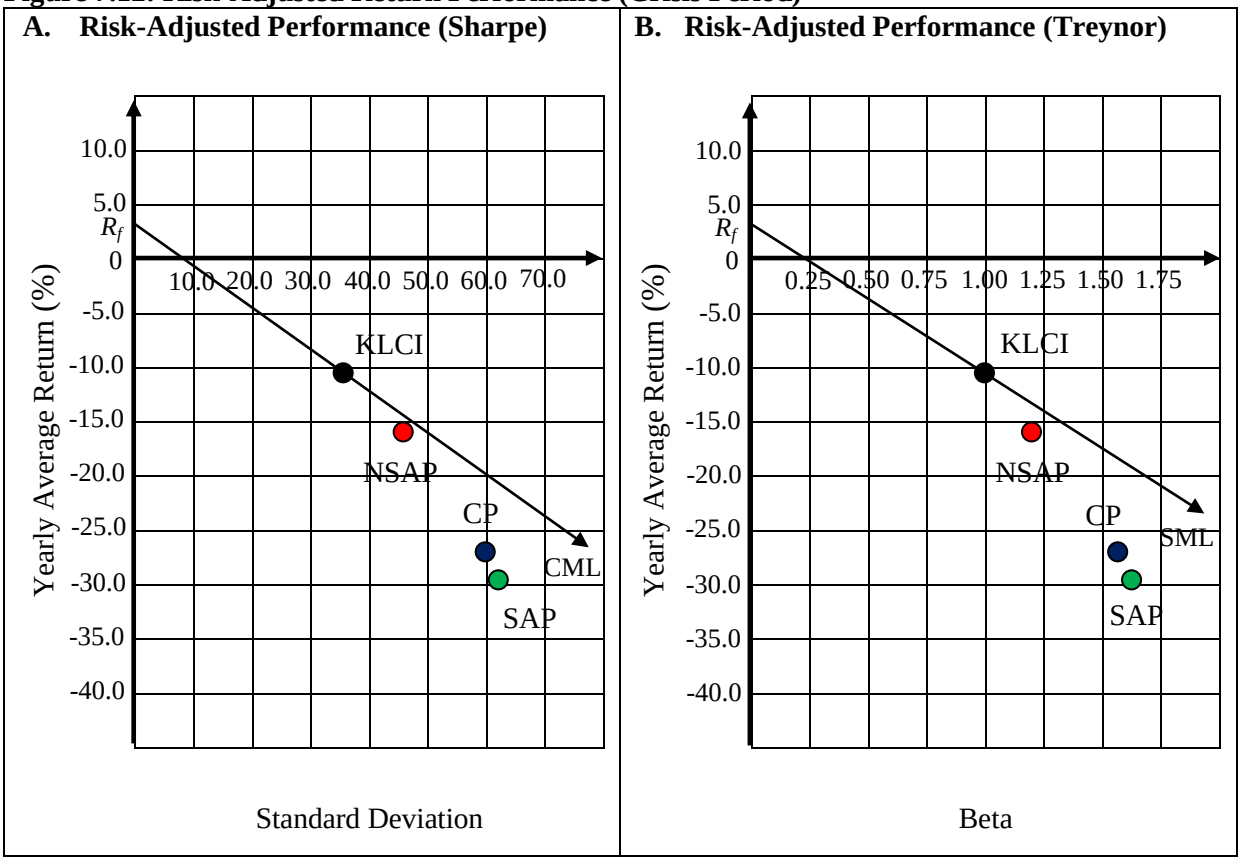


Figure 7.13: Risk-Adjusted Return Performance (Post-Crisis Period)

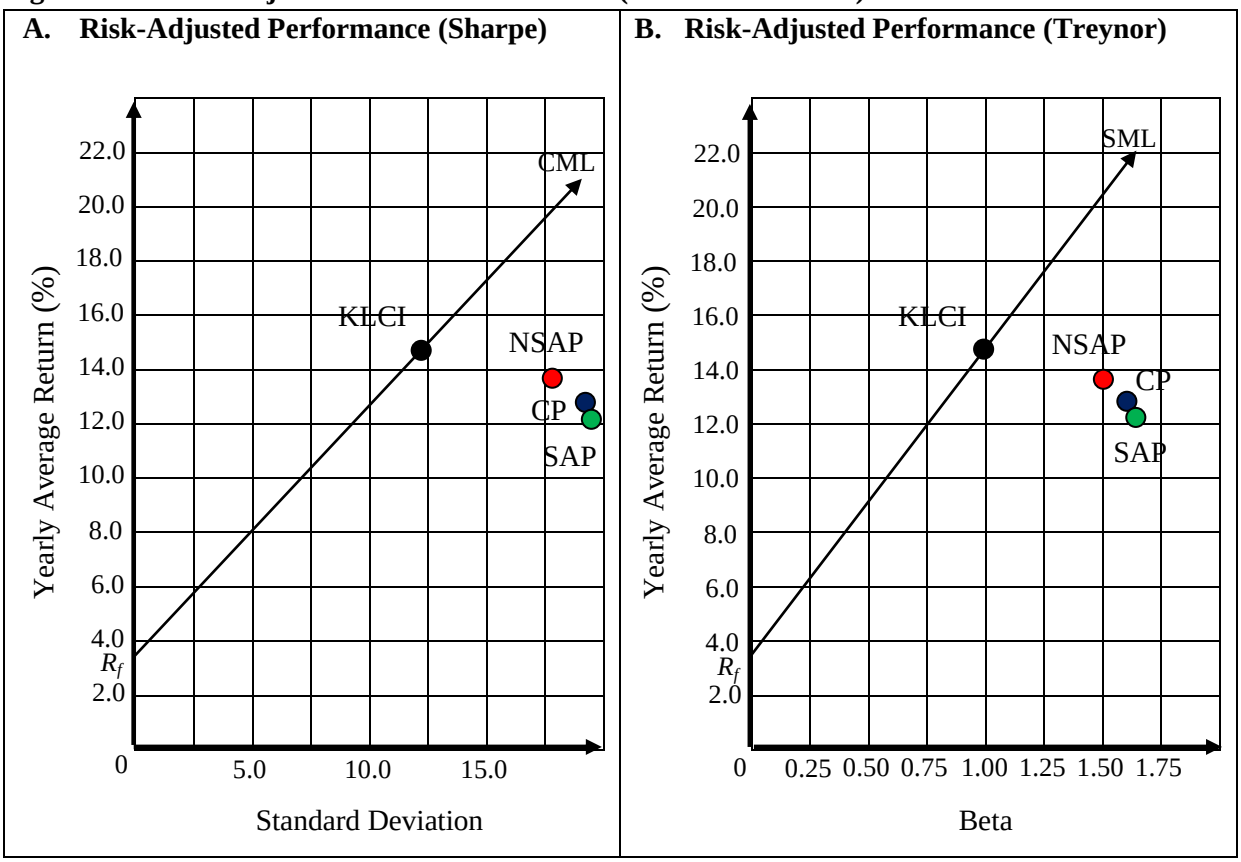


Table 7.31 below shows the results of the risk-adjusted return performance of the hypothetical portfolios as measured using the Jensen-*alpha* index and the order of the portfolio ranking determined based on the adjusted Jensen-*alpha* Index (Equation 6.26). The table reveals that, given the beta of the portfolios, NSAP is the only portfolio which managed to beat the market in the full sample period. The sin portfolio outperformed the market portfolio by 3.54 per cent whilst CP underperformed the market portfolio by 1.48 per cent and SAP by 2.55 per cent. The zero Jensen-*alpha* value for the KLCI indicates that the benchmark index was chosen as the market portfolio. As expected, the three portfolios outperformed the market portfolio significantly during the market rally period with NSAP earning the highest excess return of 10.82 per cent followed by CP (9.31 per cent) and SAP (8.65 per cent). However, the performance of the hypothetical portfolios relative to the market portfolio in the crisis and post-crisis period was rather disappointing as none of the hypothetical portfolios was able to outperform the market portfolio during the periods. Hence, although the hypothetical portfolios managed to recover substantially after the crisis, their recovery was lower than that of the market portfolio on a risk-adjusted basis. Consistent with the results obtained from the Sharpe Index and Treynor Index previously, SAP has underperformed the other portfolios and ranked third among the hypothetical portfolios throughout the period.

Table 7.31: Portfolio Performance and Ranking Based on the Jensen-*alpha* Index

	$\overline{R}_i$ (%)	β_i (x)	$\overline{R}_f$ (%)	$\overline{R}_m$ (%)	Jensen-α Index	Adjusted Jensen-α	Ranking
(A) Full Period (1990-2008)							
CP	6.23	1.5957	4.63	6.56	-1.4797	-0.9273	2
SAP	5.24	1.6359	4.63	6.56	-2.5473	-1.5571	3
NSAP	10.87	1.4003	4.63	6.56	3.5374	2.5262	1
KLC1	6.56	1.0000	4.63	6.56	0.0000	0.0000	
(B) Market Rally Period (1990-1997)							
CP	27.14	1.4094	6.24	14.46	9.3147	6.6090	2
SAP	26.43	1.4033	6.24	14.46	8.6549	6.1675	3
NSAP	30.22	1.6014	6.24	14.46	10.8165	6.7544	1
KLCI	14.46	1.0000	6.24	14.46	0.0000	0.0000	
(C) Crisis Period (1998-2003)							
CP	-27.00	1.5881	3.77	-10.96	-7.3773	-4.6454	2
SAP	-29.03	1.6454	3.77	-10.96	-8.5633	-5.2044	3
NSAP	-16.86	1.2340	3.77	-10.96	-2.4523	-1.9880	1
KLCI	-10.96	1.0000	3.77	-10.96	0.0000	0.0000	
(D) Post-Crisis Period (2004-2008)							
CP	12.65	1.6027	3.07	14.93	-9.4280	-5.8826	2
SAP	12.46	1.6300	3.07	14.93	-9.9418	-6.0993	3
NSAP	13.18	1.5129	3.07	14.93	-7.8330	-5.1775	1
KLCI	14.93	1.0000	3.07	14.93	0.0000	0.0000	

7.3.5.2 Portfolio Performance Valuation Using Islamic-Based Benchmark Instruments

Thus far, the valuation of the portfolios' performance on the basis of their risk-adjusted return was undertaken based on conventional instruments namely the KLCI and the Malaysian T-Bills. Therefore, it would be appropriate to extend the analysis by applying *Shariah*-compliant assets since such instruments arguably are the more suitable benchmarks when measuring the performance of Islamic-based portfolio. This is because conventional instruments are essentially a different class of assets since they are not subject to *Shariah* restrictions as in the case of the Islamic-based portfolio. In addition, there is also a need to preserve the purity and fairness in the valuation of the Islamic-based portfolio. For the purpose of this study, the chosen *Shariah*-compliant benchmarks are the FBM Emas *Shariah* Index (FBMSHA) to represent the market portfolio and the *Mudharabah* investment account rate as the proxy for the risk-free rate instrument. Since the FBMSHA is a relatively new benchmark, the analysis covers only one time period

from 2000 to 2008. The results of the analysis are shown in Tables 7.32 and 7.33 as well as in Figure 7.14 below.

Table 7.32: Portfolio Performance & Ranking Based on the Sharpe and Treynor Measures

	$\bar{R}_i$ (%)	σ_i (%)	β_i (x)	$\bar{R}_f$ (%)	Sharpe Index	Treynor Index	Sharpe Ranking	Treynor Ranking
CP	5.87	39.11	-0.7667	3.55	0.0593	-3.0260	2	2
SAP	4.94	41.18	-0.7415	3.55	0.0338	-1.8746	3	1
NSAP	9.27	29.70	-0.7856	3.55	0.1926	-7.2811	1	3
FBMSHA	5.37	14.20	1.0000	3.55	0.1282	1.8200		

Figure 7.14: Risk-Adjusted Return Performance Based on *Shariah*-Compliant Instruments

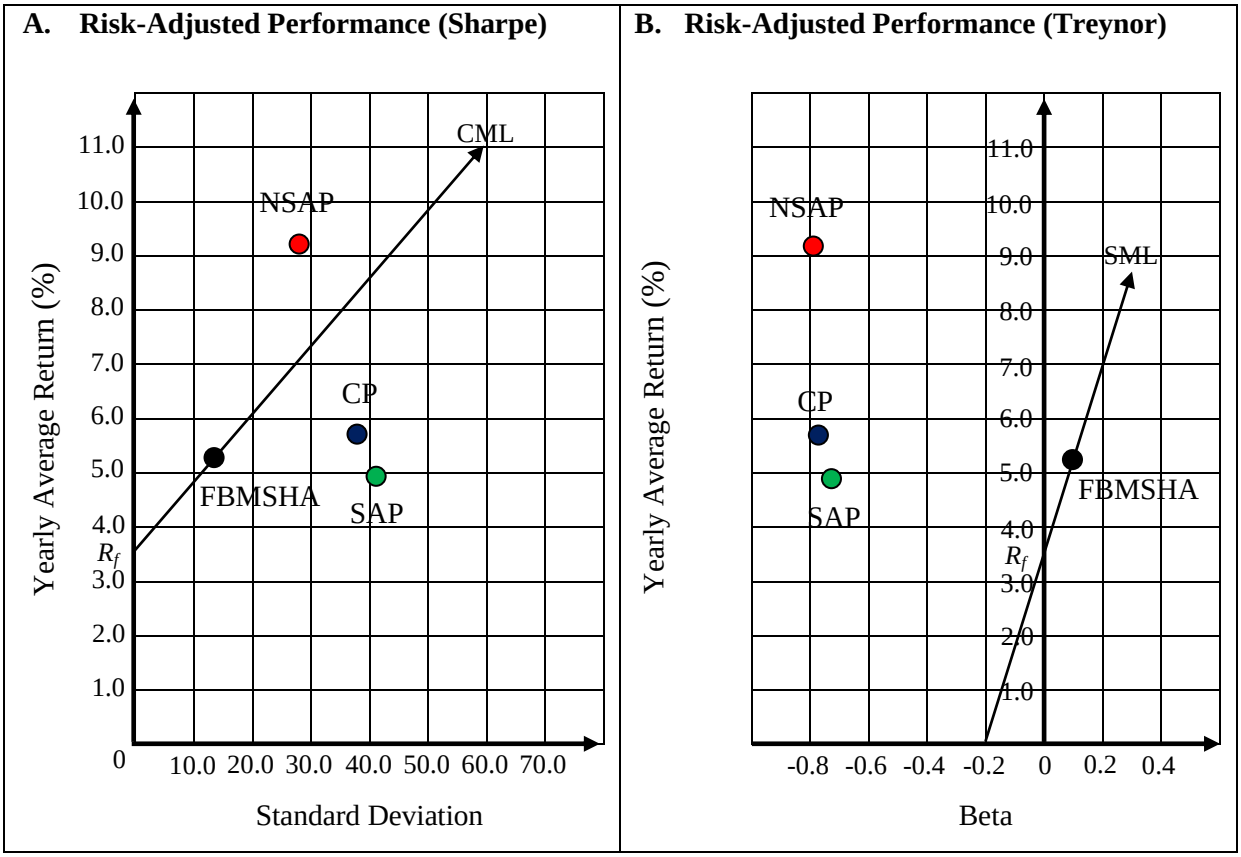


Table 7.33: Portfolio Performance and Ranking Based on the Jensen-*Alpha* Index

	$\bar{R}_i$ (%)	β_i (x)	$\bar{R}_f$ (%)	$\bar{R}_m$ (%)	Jensen-α Index	Adjusted Jensen-α	Ranking
CP	5.87	-0.7667	3.55	5.37	3.7154	-4.8460	2
SAP	4.94	-0.7415	3.55	5.37	2.7395	-3.6946	1
NSAP	9.27	-0.7856	3.55	5.37	7.1498	-9.1011	3
FBMSHA	5.37	1.0000	3.55	5.37	0.0000	0.0000	

Table 7.32 reveals that if the performance of SAP is measured by the Sharpe Index, the results are consistent with the outcomes of the previous analyses using conventional instruments as the benchmark, of which, SAP underperformed the other portfolios, having the lowest Sharpe Index and ranking third among the portfolios. Figure 7.14 gives a visual confirmation of the SAP's underperformance by virtue of the portfolio's position below the market line. Portfolio ranking by the Treynor Index and the adjusted Jensen-*alpha* Index shown in Table 7.33 however, is rather different since both measures suggested that SAP is the best performing portfolio and ranked first among the portfolios. Although the Jensen-*alpha* Index signifies that SAP has outperformed the market portfolio by 2.74 per cent against 3.72 per cent by CP and 7.15 per cent by NSAP, the *Shariah*-compliant portfolio is ranked first when the alpha is adjusted for the beta of the individual portfolio. The contradicting ranking is due to the Treynor Index and the adjusted Jensen-*alpha* Index rewarding a portfolio that has the lowest systematic risk unlike the Sharpe Index which gives an advantage to a portfolio with minimum total risk. Therefore, since SAP has the lowest beta, it was ranked as the best portfolio by the two measures accordingly. With regards to the Treynor Index, although the negative value of the index may not give a meaningful interpretation when such analysis involved an actual fund performance, the result is nonetheless consistent with the adjusted Jensen-*alpha* Index. Therefore, while the results might need to be interpreted cautiously, they give an important indication that the valuation of an Islamic-based portfolio is also sensitive to the type of assets used as benchmark.

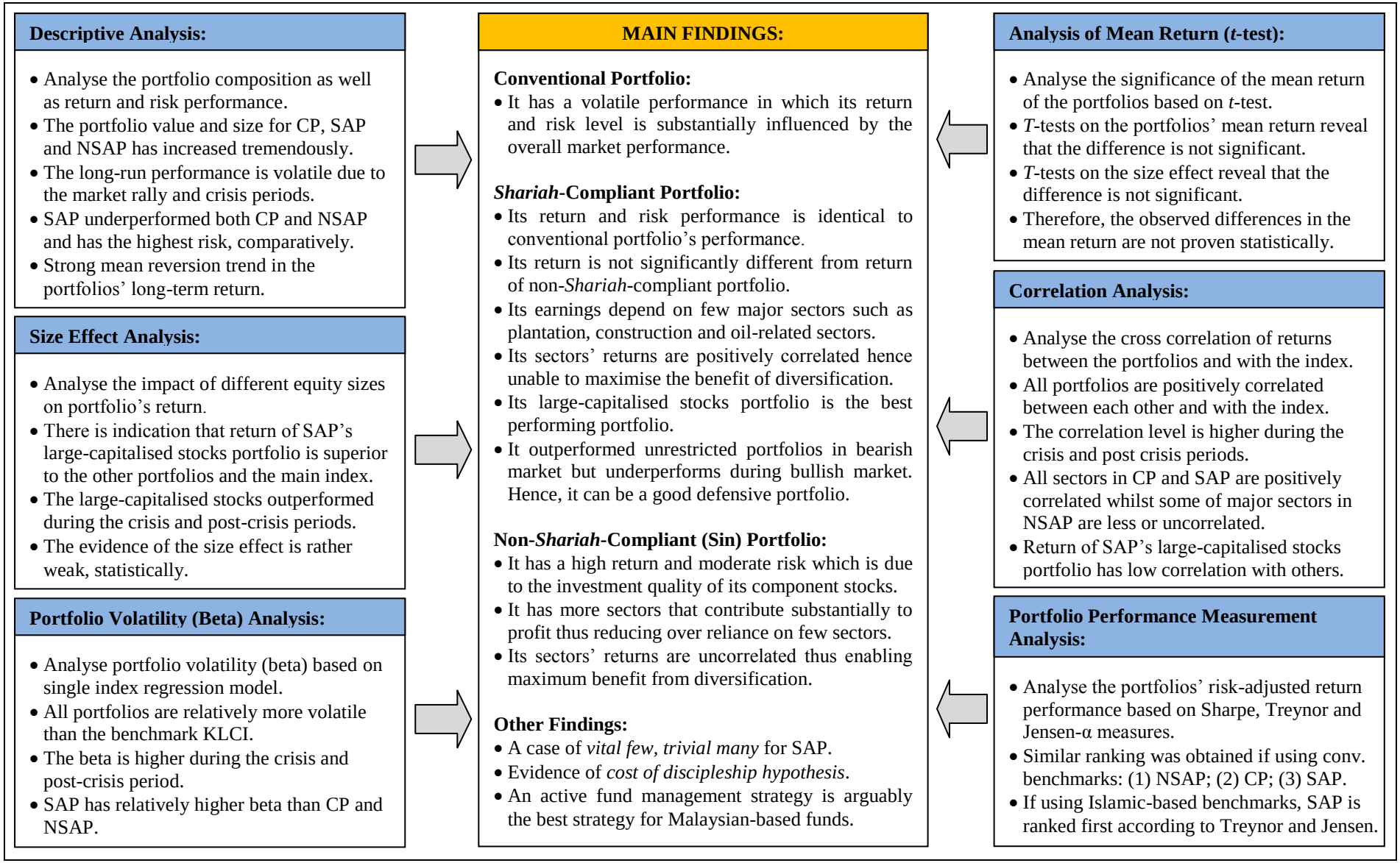
To conclude, the risk-adjusted performance analysis using the traditional portfolio performance valuation models of the Sharpe Index, the Treynor Index and the Jensen-*alpha* Index reveals that NSAP was consistently ranked the best portfolio followed by CP and SAP when their performance is benchmarked against conventional instruments. In sub-period samples, the hypothetical portfolios outperformed the market portfolio only in the market rally period but underperformed in the crisis and post-crisis period. This suggests that the best trading strategy is probably to invest in the KLCI's component stocks during unfavourable market condition. Another interesting conclusion that can be drawn from the analysis is that the performance of *Shariah*-compliant portfolio might also be sensitive to the type of benchmarks used for comparison. This is evident from the finding that when using *Shariah*-compliant instruments, the Islamic-based portfolio

managed to outperform its conventional counterparts and it was ranked as the top portfolio by both the Treynor Index and the adjusted Jensen-*alpha* Index.

7.4 RESULTS DISCUSSION

This section discusses the results obtained from the various empirical tests of the hypothetical portfolios' performance. To recap, the statistical tests that have been undertaken include descriptive analysis to obtain a general overview of the portfolios' performance; the *t*-test to determine the significance of the difference in the portfolios' mean returns; the correlation test to examine the relationship of the portfolios' returns; the OLS regressions to investigate the firm size effect on portfolios' return as well as the portfolios' volatility; and, the analysis of portfolio performance using the traditional portfolio valuation models to measure the portfolios' performance and their ranking. The empirical analyses undertaken and their findings are summarised in Figure 7.15.

Figure 7.15: Summary of Quantitative Analysis



Casual observation on the portfolios' performance over the 19-year period from 1990 to 2008 indicates that the sizes of the three hypothetical portfolios have grown tremendously both in terms of value as well as the numbers of their component stocks. The long-term performance also reveals that trading in the Malaysian stocks has been excessively volatile particularly on two occasions: namely the market rally of 1993 to 1994, and the stock market crisis of 1998 to 2003 periods. Consequently, the long-run historical performance was heavily skewed by these two market events, thus making the analysis of the portfolio performance rather tricky and preventing a conclusive decision to be made if such analysis is solely based on the full period sample. Therefore, the full period sample was further divided into three sub-periods namely the market rally period (1990 to 1997), the crisis period (1998 to 2003), and the post-crisis period (2004 to 2008) to allow for in depth examination of the impact of different market conditions on the portfolios' return. The volatile performance of the hypothetical portfolios' return is generally consistent with the overall volatility in the stock market as reflected by the large fluctuation in the KLCI. This implies that share prices in the Malaysian stock market, and hence, the portfolios' performance, are significantly influenced by the general market performance. Fortunately, despite the volatile market condition, all portfolios have successfully generated a cumulative positive return throughout the period. The long-term performance of the hypothetical portfolios' return has clearly followed the overall market trend with bulk of the return being earned during the market rally period. Although the portfolios suffered heavy losses during the crisis period, they were able to recover their losses and return to profit in the post-crisis period. In general, however, return of the SAP's portfolio is below the return of the conventional and sin portfolios.

The descriptive analysis shows that SAP underperformed the unrestricted portfolios in full as well as sub-period samples. In addition, SAP has the highest risk relative to CP and NSAP for most of the periods except during the post-crisis period during which its risk was the lowest. It also appears that the performance of SAP closely resembles the performance of CP which is attributed to the similarities in their portfolio composition as SAP also invests in almost all stocks held by CP. However, the presence of non-*Shariah*-compliant heavyweight stocks in CP has enabled the portfolio to slightly outperform SAP. In view that CP invests in both *Shariah*-approved and non-*Shariah*-approved stocks, it could be regarded as representing actual conventional portfolios commonly available in the market. On the other hand, NSAP, which can be regarded as a

sin portfolio since it invests entirely in non-permissible (*haram*) stocks, has outperformed both CP and SAP throughout the period. Although the observed lower return and higher risk level implies that an adherence to *Shariah* restrictions may have adverse consequences on portfolio performance, it is premature at this point to assume that return of the *Shariah*-compliant portfolio is inferior to conventional or sin portfolios without undergoing relevant empirical tests. The following discussion attempts to find the reasons behind the SAP's underperformance.

To determine whether the difference in the portfolios' mean return is statistically significant, paired-sample *t*-tests were conducted. The *t*-tests revealed that the differences in the portfolios' mean return are not significant statistically. Consequently, the observed superior return of NSAP, or to view it from a rather different perspective the inferiority of SAP's return, has not been proven statistically by the *t*-tests analysis. Likewise, the *t*-tests also confirmed that the difference between the mean return of SAP and CP is not statistically significant. Therefore, although the descriptive analysis shows that there are differences in the mean return of the portfolios, the statistical results are not robust enough to support the claim that the return of the *Shariah*-compliant portfolio is inferior to the return of non-*Shariah*-compliant portfolios, or vice versa, amid the absence of more conclusive evidence. Instead, the statistical results do suggest that the return of the *Shariah*-compliant portfolio is not significantly different from the return of non-*Shariah*-compliant portfolios.

In terms of portfolio risk, the descriptive analysis indicates that SAP is riskier than CP and NSAP since it has a slightly higher standard deviation when compared to its rival portfolios in all periods. This is confirmed by the analysis of the portfolio beta. The hypothetical portfolios in general have high beta indicating that their performance is relatively more volatile than the performance of the benchmark KLCI. This is attributed to the strong positive correlation between the hypothetical portfolios' returns and the benchmark's return which results in the performance of the hypothetical portfolios being influenced by the performance of the KLCI, particularly during the crisis and post-crisis periods. SAP has lower beta during the market rally period but its beta is the highest in crisis and post-crisis periods. On the contrary, NSAP has the lowest beta among the portfolios which reflects that trading in this portfolio is relatively less volatile. Notwithstanding however, SAP is arguably the best performing portfolio, particularly in

the post-crisis period considering that it posted the most recovery from the crisis period in comparison to CP and NSAP. Therefore, the higher risk and volatility in SAP is consistent with the stronger rebound by the *Shariah*-compliant portfolio in the post-crisis period.

Since a portfolio's return and risk level is directly influenced by its component stocks or industries in the portfolio, the analyses have examined each of the hypothetical portfolios' component sectors to determine their composition. For CP, its return is mainly supported by large-capitalised stocks involved in construction, finance, plantation, industrial engineering, tobacco and oil-related sectors. For SAP however, most of its earnings come from just a few defensive industries such as construction, plantation, industrial engineering and oil-related stocks. In addition, the correlation analysis reveals that returns of the sectors in SAP are positively correlated, thus implying that the *Shariah*-compliant portfolio may not be able to maximise the benefit from its industry diversification. With respect to industry composition, NSAP has the advantage since it could rely on profitable and stable sectors such as finance, gaming, conglomerate and tobacco to ensure sustainable earnings growth. Therefore, unlike SAP, NSAP has more sectors which contribute substantially to its total income, thus reducing the overreliance on just a few sectors to support its earnings. Since correlation analysis indicates that returns from the different major income generating sectors in CP and NSAP are moderately and insignificantly correlated, the non-*Shariah*-compliant portfolios are able to maximise the benefits from their industry diversification, thus allowing the portfolios to maintain their earnings in any given market condition.

Results of the correlation analysis, undertaken to examine the cross relationship in the hypothetical portfolios' returns, reveal a strong positive correlation in returns of the portfolios and the benchmark index. This signifies that the portfolios tend to move in a similar direction and are significantly influenced by the overall market performance. There is also evidence of varying degrees of correlation levels in different time periods whereby CP and SAP are found to be more correlated with the KLCI in the crisis and post-crisis periods than in the market rally period. The high correlation between the portfolios' returns and the KLCI's return during the bearish market condition implies that investors turned to the benchmark index for direction amid the absence of market boosting news and tracked the index performance closely. The findings from the

correlation tests are supported by the analysis of the portfolios' volatility, in which, their positive betas indicate that the hypothetical portfolios would tend to fluctuate in a similar direction with the KLCI's movement. The portfolio betas of CP and SAP are also higher than the beta of NSAP in the crisis and post-crisis periods which coincided with the observed higher correlation between the two portfolios and the KLCI during these periods.

Results of the analysis of the hypothetical portfolios' returns based on different equity sizes indicate the presence of the *firm size effect* favouring large-capitalised stocks particularly in the *Shariah*-compliant portfolio. The analysis found that SAP's portfolio consisting of large-capitalised stocks has outperformed not only its sister portfolios which invested in medium and smaller capitalised stocks but also non-*Shariah*-compliant portfolios and the benchmark index, particularly during bearish market condition. The result is important, as it implies that *Shariah*-compliant funds or *halal*-approved stocks are better candidates for defensive investment strategy as they are able to help in maintaining a portfolio's earnings or to lessen the impact of market volatility arising from the changing economic or business cycles. One plausible explanation for the outstanding performance of the large-capitalised stocks portfolio is its low and insignificant correlation with other types of portfolio sizes and with the benchmark index which, in turn, suggests that the large-capitalised stocks portfolio is not heavily influenced by other portfolios or by the general market performance. This is due to the portfolio's components being mainly comprised of blue-chip companies with sound fundamentals and sustainable income. The evidence of the size effect however, is not robust statistically, as shown by the regression analysis, thus rendering the findings to be rather inconclusive statistically.

The final part of the quantitative analysis evaluated the hypothetical portfolios' return using the traditional risk-adjusted portfolio performance measurement models of the Sharpe Index, the Treynor Index and the Jensen-*alpha* Index. The results confirmed the findings from earlier analyses that SAP generally underperforms CP, NSAP and the market portfolio. When the hypothetical portfolios' performance is benchmarked against conventional instruments, all three standard models produced a consistent ranking in which NSAP is ranked the top portfolio followed by CP and SAP. NSAP is the only portfolio that outperformed the market portfolio in the full sample period while both CP

and NSAP underperformed the market portfolio in the same period. As expected, the three hypothetical portfolios outperformed the market portfolio in the market rally period but underperformed during the crisis and post-crisis periods. The findings are in-line with the results obtained from the descriptive analysis, the correlation analysis and the portfolio volatility analysis which indicate that the performance of share prices, and hence, the hypothetical portfolios is heavily influenced by the KLCI particularly when market condition is unfavourable. The superior performance of NSAP is attributed to the investment quality of its component stocks which comprises of high-yielding, large-capitalised but non-*Shariah*-compliant stocks as earlier revealed by the descriptive analysis related to the portfolio's component stocks.

On the other hand, when performance is benchmarked against *Shariah*-compliant instruments, SAP emerged as the best performing portfolio based on the Treynor Index and the adjusted Jensen-*alpha* Index albeit the Islamic-based portfolio remained in third ranking by the Sharpe Index. The contradicting ranking being due to the Treynor Index and the adjusted Jensen-*alpha* Index rewarding the least volatile portfolio, in this case SAP has the advantage since it has the lowest beta when its performance is measured against the *Shariah* index. Although the negative Treynor Index may not provide a meaningful interpretation when such analysis involves an actual managed fund, the result is consistent with the adjusted Jensen-*alpha* Index, hence suggesting that any analysis related to Islamic fund performance should be undertaken cautiously as the outcomes may be sensitive to the type of benchmark used for comparing the Islamic fund performance, particularly the choice between *Shariah*-compliant or conventional benchmark instruments.

To conclude, the quantitative analysis has investigated the performance of the *Shariah*-compliant portfolio vis-à-vis the performance of the non-*Shariah*-compliant portfolios and the benchmark index. Several types of statistical tests were conducted systematically to allow for thorough examination of the performance of the hypothetical portfolios. The empirical analysis begins with the descriptive analysis of the portfolios' return which enables each of the portfolios to be characterised based on their return and risk performance. The descriptive analysis reveals that there is an obvious difference in the hypothetical portfolios' performance, with SAP generally underperforming both CP and NSAP. This is based on the findings that the return of the *Shariah*-compliant

portfolio is below the return of the non-*Shariah*-compliant portfolios, whilst its risk is higher than the risk of its rival portfolios. Subsequently, the difference in the return of the portfolios is analysed using the paired sample *t*-test to determine whether the difference between two portfolios' mean return is statistically significant. Results of the *t*-test show that the difference in the portfolios' return is not significant statistically. Since return of the portfolios is greatly affected by the performance of their component stocks, further analysis was conducted to examine the contribution from each industry in the hypothetical portfolios. The results reveal that while SAP has to rely on just a few profitable industries, NSAP has more industries capable of generating substantial income for the portfolio. In addition, results of the correlation analysis reveal that returns of the hypothetical portfolios are positively and strongly correlated amongst each other and with the benchmark index, and the correlation levels vary in different market conditions. The correlation analysis also indicates that NSAP has more uncorrelated industries in its portfolio which explains the superior performance of the sin portfolio against the *Shariah*-compliant portfolio as observed in the descriptive analysis.

The analysis was further extended into the investigation of the firm size effect. The analysis found that SAP's portfolio comprising large-capitalised stocks is the best performing portfolio since it managed to outperform not only the other portfolios but also the benchmark index especially in bearish market conditions. However, despite the overwhelming evidence from the descriptive analysis, the evidence of the size effect is not robust statistically, hence the evidence cannot be used to generalise that the performance of an Islamic-based portfolio which specialises in large-capitalised stocks is superior to the other portfolios. The analysis of the portfolios' volatility in relation to the overall market performance was conducted by calculating the hypothetical portfolios' beta using the single index regression model. The beta analysis indicates that the portfolios are more volatile than the benchmark index which, in turn, implies that their performance is significantly influenced by the overall market performance. The portfolios' return volatility also varies in different market conditions based on their beta which tends to be higher during the crisis and post-crisis periods. In addition, SAP generally has higher beta relative to CP and NSAP. Therefore, results from the analysis of the portfolios' beta have confirmed the earlier findings pertaining to the portfolio risk analysis using the standard deviation as well as the correlation analysis.

The portfolio performance analysis based on the risk-adjusted return reveals that SAP was consistently ranked lower as compared to CP and NSAP. In fact, NSAP was ranked as the best portfolio by the traditional portfolio valuation models. This implies the difficulty of the *Shariah*-compliant portfolio to outperform the non-*Shariah*-compliant, particularly if their performance is measured against conventional benchmarks. This is arguably due to the possible bias against the Islamic-based portfolio arising from the *Shariah* restrictions on stocks and industries selection which prevent Islamic-based portfolio from investing in high-yielding non-*Shariah*-compliant conventional instruments, yet its performance is benchmarked against those instruments. Further analysis has demonstrated that when *Shariah*-compliant instruments are used as the performance benchmarks, the Islamic-based portfolio is able to outperform conventional portfolios. This implies that the valuation of Islamic-based portfolio performance is sensitive to the type of benchmark used as the basis for measuring its performance.

7.5 CONCLUDING REMARKS

This chapter focuses on the quantitative analysis of the performance of *Shariah*-compliant funds based on hypothetical portfolios comprising entirely of Malaysian stocks. There are three portfolios created specifically for the purpose of this study, namely: Conventional Portfolio (CP), a non-*Shariah*-compliant portfolio which invests in both *halal*-approved and non-*halal*-approved stocks and is used to represent conventional or ethical funds in Malaysia; *Shariah*-Approved Portfolio (SAP), a *Shariah*-compliant portfolio which invests only in *halal*-approved stocks and is meant to represent Islamic-based funds; and, Non-*Shariah*-Approved Portfolio (NSAP), a non-permissible (*haram*) or sin portfolio which invests only in stocks deemed prohibited by the *Shariah*.

The descriptive analysis indicates that return of SAP is generally below the return of CP and NSAP as well as the benchmark KLCI index. The difference however, is not statistically significant; hence the evidence is not robust enough to infer that return of *Shariah*-compliant funds is inferior to the return of non-*Shariah*-compliant funds. The results also suggest that the performance of SAP is identical to the performance of CP which is attributed to the similarities in their portfolio composition as the latter is able to invest in both *halal*-approved and non-*halal*-approved stocks. Consequently, CP is

poised to have an advantage over SAP in terms of securities selection since it could choose the best stocks from both *halal*-approved and non-*halal*-approved assets universe. Consequently, this makes it rather difficult for the Islamic-based portfolio to beat its conventional counterparts. In hindsight, the findings of the descriptive analysis have partly confirmed the *cost of discipleship hypothesis* which argues that investment with religious or ethical concerns entails costs, resulting in lower performance due to various constraints imposed on the portfolio.

Interestingly however, further analysis suggests that the performance of a SAP portfolio that invests only in large-capitalised stocks is superior to the performance of conventional portfolios and the KLCI particularly during an unfavourable market condition. Hence, at least, the Islamic-based portfolio may be regarded as an effective defensive portfolio due to its ability to outperform other portfolios especially when the stock market turned bearish. Although the results supporting the size effect are not robust statistically, despite the overwhelming evidence from the portfolios' return, they do indicate the presence of the firm size effect favouring large-capitalised stocks in the *Shariah*-compliant portfolio. In view of this, the SAP's underperformance can be attributed to the overexposure to medium and small-capitalised stocks whose earnings and share prices are more volatile as compared to the more stable heavyweight stocks, thus increasing the portfolio's risk as shown by the higher standard deviation and the beta of the portfolio. Since the composition of the *Shariah*-compliant portfolio is dominated by medium and small-capitalised stocks, their volatile performance, especially during crisis and post-crisis periods, has compromised the positive return from the large-capitalised stocks and dragged the *Shariah*-compliant portfolio's return lower relative to the return of the non-*Shariah*-compliant portfolios. Hence, it is a classic case of "vital few, trivial many" for the Islamic-based portfolio since the availability of the large numbers of *halal*-approved stocks may not necessarily give an advantage to the *Shariah*-compliant portfolio over the non-*Shariah*-compliant portfolio. This is due to majority of the *halal*-approved stocks being medium and smaller stocks whose earnings and share prices are more volatile, thus, unfortunately, affecting the Islamic-based portfolio's performance adversely.

The comparative performance between SAP and NSAP clearly indicates that, in the process of portfolio construction involving stock selection, the investment quality of

the stocks rather than their quantity is crucial to portfolio performance. Hence, if consideration is based strictly on stocks or industry selection, an Islamic-based portfolio would clearly be in a disadvantaged position as compared to conventional and sin portfolios since *Shariah* restrictions would effectively cause Islamic-based portfolio to shun high-yielding, uncorrelated but non-*halal* heavyweight stocks or industries. Consequently, an Islamic-based fund is left with just a limited numbers of high-yielding stocks or profitable industries which, in turn, are likely to increase the risk of over-reliance of the *Shariah*-compliant fund towards a handful of quality stocks or industries in view that majority of *halal*-approved stocks are unfortunately rather trivial, investment wise. The analysis has revealed that the superior performance of NSAP is primarily due to its ability to maximise the benefit from industry diversification since the sin portfolio has more high-yielding, non-correlated heavyweight stocks in its portfolio. Under this circumstance, it will be rather difficult for an Islamic-based portfolio to outperform its conventional counterparts and it would also cause the portfolio's performance to be heavily dependent upon other factors, among which, its fund managers' superior investment skill is arguably the most vital.

Analysis of the hypothetical portfolio performance based on their risk-adjusted return reveals some interesting results. Although the Sharpe Index, the Treynor Index and the adjusted Jensen-*alpha* Index generally confirmed the superiority of the sin portfolio over the *Shariah*-compliant portfolio by virtue of their consistent ranking which put NSAP as the top performing portfolio when performance is measured against conventional benchmarks, similar analysis using *Shariah*-compliant benchmarks indicates that the Islamic-based portfolio is able to outperform the sin portfolio. Though the results favouring SAP may be considered premature amid the limited data available, the findings do suggest that any valuation of an Islamic-based portfolio might be sensitive to the type of benchmarks used for performance comparison particularly with regards to the choice between *Shariah*-compliant or conventional benchmarks, nonetheless. In addition, the findings that the hypothetical portfolios outperformed the market portfolio only during the market rally period but underperformed the index in the crisis and post-crisis periods also have quite a significant implication. The result which is consistent with the findings of the correlation analysis implies that the best trading strategy to pursue in a bearish market condition is to invest in the KLCI's main component stocks.

Another interesting observation from the quantitative analysis is that the historical performance of the hypothetical portfolios' returns shows a very strong mean reversion trend which suggests that a passive buy-and-hold policy is unlikely to generate favourable positive return over a long-term period. This is because the hypothetical portfolios are designed as purely market-based portfolios, of which, their return is entirely influenced by the overall market performance without interference from other non-market factors such as fund managers' investment skills or changes in trading microstructure, regulatory environment or corporate activities of the listed companies. Instead, the volatility in the hypothetical portfolios' return reflects the actual fluctuation in the overall market performance, in which, the strong mean reversion trend implies that the long-term return of the portfolio is close to zero on the back of the excessive price fluctuation in the Malaysian stock market over the last 19-year period. Therefore, in confronting such a highly volatile market environment, the more successful approach is arguably the active fund management strategy, especially for an Islamic-based fund which at its inception has already been constrained by its *Shariah*-related investment mandates. Certainly, the most crucial aspect in an active fund management strategy is the fund/investment managers themselves. The next chapter provides the qualitative analysis involving interviews with actual fund/investment managers based in Malaysia who are directly responsible for the handling of Islamic funds. Analysis of the primary data obtained from the industry practitioners would offer a new perspective on issues pertaining to Islamic fund operations and performance valuation that could further broaden and strengthen the findings of this study.

Chapter 8

EXPLORING THE ACTUAL ISLAMIC FUND MANAGEMENT OPERATION AND VALUATION OF ISLAMIC FUNDS' PERFORMANCE IN MALAYSIA: PERCEPTION ANALYSIS

8.1 INTRODUCTION

This chapter focuses on the analysis of the Islamic fund management operation and valuation of Islamic funds' performance in Malaysia. This analysis is basically intended to complement the quantitative analysis discussed in the preceding chapter by obtaining inputs from industry practitioners through face-to-face interviews with Islamic fund/investment managers. The main objectives of the qualitative analysis is to look into the actual Islamic fund management practices, to analyse how comprehensive the *Shariah* principles are applied in the Islamic funds' creation and handling, to examine the impact of *Shariah*-compliance requirements on Islamic funds' performance, and to investigate the actual Islamic funds' performance and measurement techniques. The subject interest of this analysis includes Islamic funds' characteristics (such as investment objectives, types and structure), the fund managers' traits (including their experience, skills, education background and decision making process), the *Shariah*-compliance matters (for instance including the role and function of the *Shariah* advisory board, the application of the *Shariah* principles as well as the impact of the *Shariah*-compliance requirements), and issues related to the performance of the actual Islamic funds (for example the factors affecting the performance of Islamic funds and the performance valuation methods used by the Islamic fund managers). The outcome from the analysis can be used to determine the impact of *Shariah* restrictions on Islamic funds' performance and to gauge how holistic the current Islamic fund management operation is by looking at their *Shariah* practice. Incorporating the input obtained directly from industry practitioners will certainly add significant value to the depth and reliability of this study.

The chapter begins with a detailed explanation of the research method used in this qualitative analysis, particularly the research purpose, tool and sample selection as well as

the various tasks involved in fieldwork activities which include planning, execution and post-execution stages. This is followed by a discussion of the research questions that this analysis seeks to address which are related to Islamic fund characteristics, real intention of fund management companies, factors that contribute to Islamic fund performance, *Shariah* practice and measurement of Islamic funds' performance. The chapter continues with the data analysis section which analyses the responses from participating fund managers using the coding analysis technique and the results were then deliberated in the results discussion section. The chapter then ends with a conclusion.

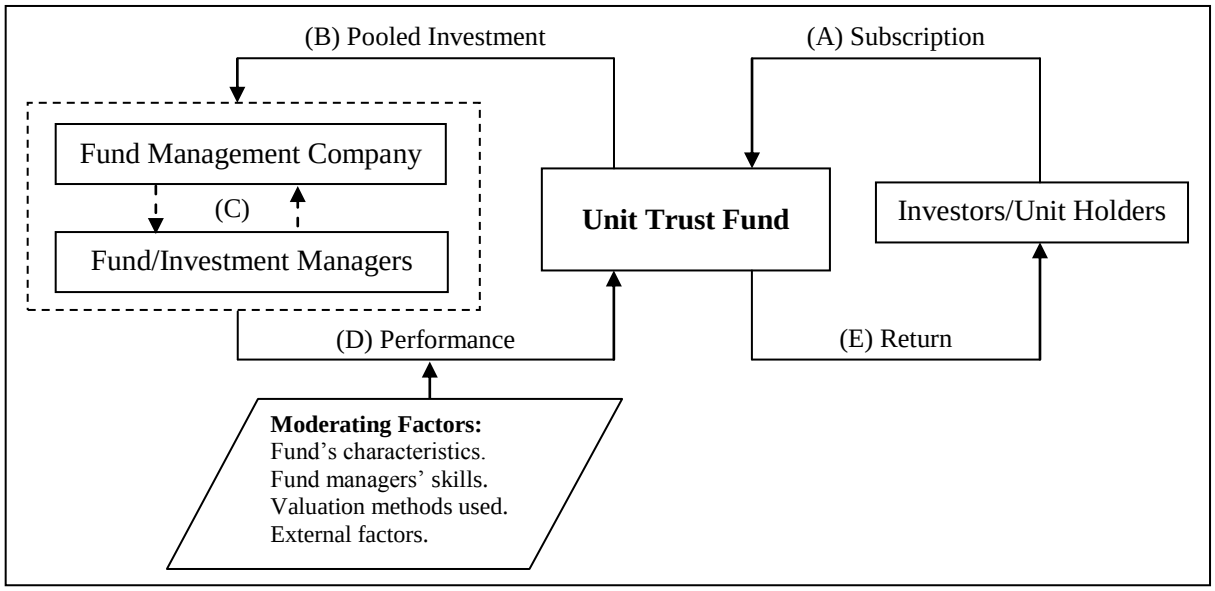
8.2 RESEARCH METHOD

This section elaborates the research method used in this analysis. The section is divided into two parts. The first part explains the research purpose, tool and sample selection of the qualitative analysis whilst the second part discusses the chronology of works which includes the planning, execution and post-execution stages involved in the fieldwork.

8.2.1 Research Purpose, Tool and Sample Selection

The analysis seeks to investigate the operation and handling of the existing Islamic funds, particularly with regards to the relationship of all parties involved in the Islamic funds operation as depicted in Figure 5.5 below (reproduced from Chapter 5, page 133):

Figure 5.5: Typical Relationship Structure in Fund Management Industry



Source: Adapted from Sekaran (2003: 92)

The relationship begins when an individual investor purchases (subscribes) a specific amount of unit(s) of an Islamic fund offered by a fund management company, thus invoking the first stage of the relationship (A) between the investor, as the registered unit holder, and the fund management company, as the party entrusted to manage the Islamic fund professionally on behalf of its investors through the subscription of the fund. In return for the fund management services rendered, the company is entitled to a pre-determined rate of fund management fees normally calculated based on a certain percentage of the fund's portfolio value. All proceeds from the Islamic fund subscription are kept by the fund management company in a pooled investment account (B) which is later invested into a portfolio of assets or securities based on the mandate specified for the fund. While the role of the fund management company is essentially to handle all the administration and marketing matters of the fund, the investment activities are actually undertaken by licensed fund/investment managers appointed by the fund management company. In this respect, the fund/investment managers can either be sourced externally from other fund management companies or internally from within the fund management company itself, provided that the company holds both the fund management company as well as investment management licence from the Securities Commission of Malaysia (or "the SC"). Therefore, the second stage of relationship (C) occurs which is between the fund management company and fund/investment managers whereby the former appoint the latter to carry out investment activities for the Islamic fund in return for a specific investment management fee. Return from all investments made on behalf of the fund is then channelled back to the fund which is later distributed to its investors/unit holders in the form of dividend return (E) at a rate which is normally determined on a discretionary basis by fund management companies. The fund performance (D) however, is subject to various factors, including the Islamic fund's characteristics, its fund managers' investment skills, and other external factors such as the economics or business cycles, stock market performance and general market sentiment.

Hence, the interest of the qualitative analysis is to investigate whether there are clear *Shariah* principles applied in the Islamic fund investors–fund management companies–investment managers tripartite relationship, and to examine how fund management companies handle *Shariah*-compliance matters related to their Islamic fund. This analysis also attempts to investigate the Islamic funds' performance particularly with regards to the consequences of adopting *Shariah*-compliance requirements and fund

valuation techniques used by fund managers when evaluating their Islamic funds' performance.

To obtain maximum input from industry practitioners directly, the analysis uses semi-structured, face-to-face interviews with fund managers as a research tool. The interview method is preferred since it is more flexible than other data gathering methods such as telephone interview, questionnaire, internet survey or personal observation because it is conducted in-person between researcher and respondents, thus allowing the researcher to clarify interview questions immediately when needed or make necessary amendments by adding new or withdrawing unsuitable questions depending on respondents' reply or circumstances. This enables deeper on-site investigation and helps minimise error due to confusion. A face-to-face interview also provides a wider opportunity for thorough observation as it allows the researcher to detect nonverbal cues through the respondents' body language that may be significant to this analysis.

The interviews are based on a set of 46 questions which are divided into five categories to reflect the five research questions that this analysis intends to investigate. Each interview lasted between 45 to 90 minutes and was recorded using a digital audio recorder. Apart from the interviews, additional information was also obtained from official printed materials such as fund prospectuses, internal reports, newsletters, in-house magazines and other publications. The sample comprises of seven fund management companies from a total of 23 companies which offer *Shariah*-compliant funds in Malaysia. The following section elaborates the chronology of events in the fieldwork activities.

8.2.2 Chronology of the Fieldwork

The fieldwork involved three main stages namely planning, execution and post-execution. Each of the stages is explained below.

8.2.2.1 Planning

The idea of conducting interview analysis emerged after considering the vital role of fund managers in determining the success of a unit trust or mutual fund. Fund managers are

essentially perceived as professionals who provide investment management and advisory services to their clients – either fund management companies or individual (usually high net worth) investors. In this respect, the fund managers are given full authority and responsibility to make investment decisions on behalf of their clients with the aim of achieving the desired return for the fund they manage, albeit they are bound to act within their respective investment mandate. The role of the fund manager is becoming even more crucial nowadays amid a more dynamic stock market environment that makes it essential for fund managers to possess superior investment skills to remain competitive. The skills include the ability to predict future market direction accurately; to determine the best time to buy or sell financial instruments; to identify undervalued securities or sectors; and, to find the right mix of individual asset classes in their portfolios' asset composition. Therefore, the dynamic market environment provides the acid test to fund managers' real capabilities as only fund managers with superior investment skills are likely to produce a satisfactory return for their clients regardless of the market condition, hence justification for their investment management fees. In addition, fund managers are also the actual industry players or practitioners in the fund management industry. Subsequently, it is natural to perceive that the fund managers would have considerable knowledge on fund management operations including investment activities, *Shariah*-compliance requirement particularly those related to portfolio investment as well as fund performance and valuation techniques. Hence, their participation would contribute significantly to this study, particularly in providing valuable input regarding fund management operations which secondary data would not be able to accommodate.

The interview process began in April 2009 with the drafting of interview questions (completed in June 2009 after numerous discussions and amendments). The set contains 46 questions which are divided into five categories to reflect the five research questions that this analysis seeks to investigate (see Appendix III). Each of the categories is related to the Islamic fund's characteristics and operations; the *Shariah* practice; the Islamic fund's performance; and issues related to an alternative fund performance measure, respectively. The fieldwork was planned to be carried out in July/August 2009 to coincide with the normally quiet period for trading activities in the Malaysian stock market. Such timing is chosen to increase the chances of acceptance by fund management companies.

The next step in the planning stage is to identify the sample respondents for this study. Since fund management services is a highly regulated industry and closely supervised by the SC, the initial list of all fund management companies was obtained from the SC itself. There are 39 fund management companies in Malaysia, of which, 29 companies are located in Kuala Lumpur. From the total, 25 companies are offering Islamic funds, with one company specialising solely in the *Shariah*-compliant fund while the rest are offering Islamic funds based on the Islamic window concept together with their conventional funds. Eventually, all 23 fund management companies offering Islamic funds and located in Kuala Lumpur were chosen as the sample. The list of fund management companies is given in Appendix II. Basic information about the selected fund management companies' including their company structure, investment personnel, the funds under their management, and contact information was obtained from their website on the internet.

Once the officer-in-charge was identified, all 23 selected fund management companies were contacted by telephone, in which the purpose of the study and intention to invite the company to take part in the analysis was conveyed to the officer-in-charge. The telephone contact was then followed by a letter of invitation sent through both surface mail and e-mail in June and July 2009 specifying the proposed date for the interview. From the total of 23 fund management companies that were invited, eight agreed to take part in the interview exercise. It is worth mentioning that all fund managers who agreed to be interviewed are Muslim fund managers whilst none of the non-Muslim dominated fund management companies accepted the invitation. Therefore, the response rate of 30 per cent from the total of 23 companies is deemed satisfactory amid the limited numbers of Muslim fund managers and the unwillingness of the non-Muslim fund managers. The fieldwork began at end-July 2009 as planned. The following section highlights the activities involved in the execution stage.

8.2.2.2 Execution

During the fieldwork however, one respondent cancelled the interview at the very last minute citing that they needed more time to prepare for the interview, thus bringing the number of the sample to seven respondents eventually. The interview process involved 12 respondents comprising of fund/investment managers from seven different fund

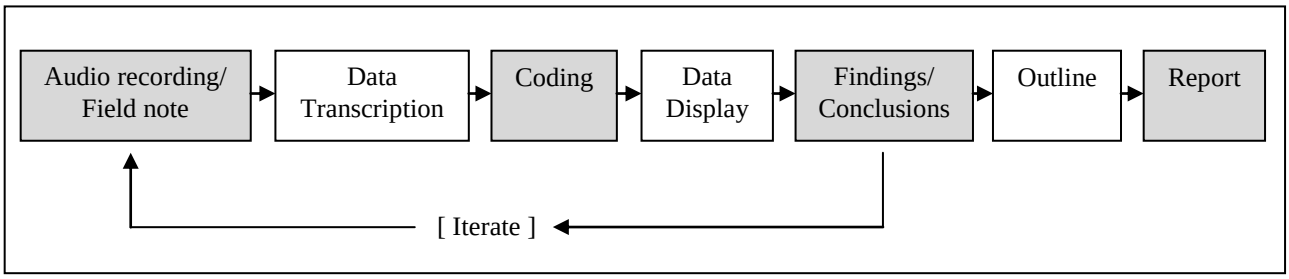
management companies. Prior to the interview sessions, all respondents were given a reassurance of the confidentiality of the conversation and information revealed in the interview, and were also reminded that they could exercise their discretion when answering any of the interview questions. All respondents were directly responsible for managing Islamic funds at their respective companies and held various positions either as chief executive officers, head of investment operations, fund managers or senior investment officer. In view that fund management companies are represented by their senior investment personnel, it carries considerable weight to the value of the analysis. All interviews took place at the fund management companies' premises and lasted between 45 minutes to 90 minutes each.

The interviews were recorded using a new digital audio recorder and stored in a laptop computer for easy retrieval. The use of a digital tape recorder reduces distraction caused by the need to take interview notes and allows full focus on the interviewing process itself. The digital tape recorder also minimises data loss as it records the interview conversation entirely. Since the interviews were fully recorded, the remaining task for interviewer during the interview session was to observe any significant non-verbal cues from interviewees, these were duly entered into interview notes. The process was then continued in the post-execution stage as follows.

8.2.2.3 Post-Execution

The post-execution stage involved the process of data transcription, coding, data analysis and report writing as shown in Figure 8.1 below. Indeed, this was the most crucial stage of the fieldwork process as it involved actual analysis from the very time consuming data transcription process to the very challenging coding analysis and data display processes, and eventually, the writing of the analysis itself. Notwithstanding these difficulties however, the entire process had to be undertaken carefully to ensure the accuracy of the analysis.

Figure 8.1: The Post-Execution Activities in the Interview Process



Source: Adapted from Miles and Huberman (1994), pp. 85.

The interview recordings were initially transcribed from audio form into written form verbatim without any alteration, preserving the authenticity of the data before analysis using the template analysis method involving various coding and decoding processes. The transcription was indeed a lengthy and time consuming process since most recorded words or phrases had to be repeated several times for clarity. The outcome from the data transcription process was a written document containing the entire conversation for each of the interview sessions. To obtain a general view of the interview results, a reply summary sheet (see Appendix IV) was created which clearly indicated the respondents' replies to all of the interview questions. In order to develop a comprehensive list of *first-level* codes (see Table 8.1, page 231), each interview document was examined and scrutinised several times and reflective, as well as marginal, remarks were introduced into the documents to better explain the meaning of words or phrases from the respondents. Reflective and marginal remarks are additional information derived from field notes taken during the interview session which include non-verbal cues and personal observation as well as other printed materials such as prospectus, internal reports, magazines and newspapers that could help in the interpretation process by clarifying the context in which a particular word or phrase was mentioned by respondents when replying to a particular interview question. Hence, both the reflective and marginal remarks allow for more accurate interpretation beyond just the simple meaning of the original words or phrases used by the respondents. The initial codes were then grouped into specific sets of themes or constructs to produce *pattern* codes (see Table 8.1) from which the relationship of the codes was revealed, thus allowing for more meaningful interpretation of the data. The coding process and discussion is explained in greater detail in Section 8.4.1.

The next task in the post-execution stage was to display the data through a *mapping* technique. The mapping is simply a schematic approach in data presentation that clearly highlights the interaction of different themes or constructs identified in the coding process. This significantly enhances the understanding of a particular subject interest or research question being investigated since it provides a better overview of the analysis and broadens the researcher's perspective. From the data mapping, the nature of relationship between codes, themes and constructs could be established rather easily which would greatly improve the reliability of the research findings and conclusions. The data display and the ensuing results discussion is given in Section 8.4.2.

The final step in the post-execution stage is report writing. The report preparation begins with the outline of the report drafted based on the coding analysis and data mapping. The report outline consists of title headings and summary of its contents that later form the basis for writing. Indeed, the writing implies that the entire process of this qualitative analysis has been completed. As the chronology of the fieldwork activities has been clearly explained, this chapter continues with the elaboration of the research questions.

8.3 RESEARCH QUESTIONS

The subject interest of this qualitative analysis is summarised into five research questions from which the interview questions were designed. The following topics elaborate the five research questions in greater detail.

8.3.1 What are the general characteristics and operations of the Islamic funds?

This research question attempts to identify the general characteristics of Islamic funds currently available in the market for the purpose of profiling the funds in terms of their types and size, their *Shariah* practice, their investment approach, their return and risk potential as well as their clients' profile. Hence, the hypothesis is that the general characteristics of an Islamic fund are different than the general characteristics of a conventional fund. The characteristics are important since they provide a better

understanding of how an Islamic fund is structured and managed that may explain the nature of the return and risk of the fund. It may also reveal the appeal of the Islamic fund and how comprehensively the *Shariah* principles are applied in the operation of the fund. The general characteristics are identified either through direct interview questions or deduction process throughout the data analysis.

8.3.2 What is the real intention of the fund management companies in offering Islamic funds?

This research question seeks to investigate the actual motives of fund management companies in offering Islamic funds. This issue is important since it could reveal the real intention behind fund management companies when offering Islamic funds. The hypothesis is that if the real intention is due to religious reasons or for the ultimate benefit of the society, the operation of the Islamic fund and its implications would reflect the true value of Islamic teachings beyond the mere pursuit of monetary gain. For this purpose, the objective and impact of Islamic funds are benchmarked against the attainment of the *Shariah* objectives (*maqasid al-Shariah*). This is determined through direct question to respondents and observation towards the construct of their Islamic fund, the extent to which *Shariah* principles are applied in the operation of their Islamic fund, their preferred securities and selection procedures as well as the appropriateness of resources dedicated to Islamic fund operations. On the contrary, if the Islamic fund is perceived as just another product by fund management companies, it is likely that economic reason would supersede religious motive and the Islamic fund's successes would be particularly measured by how well it was subscribed by investors and how much monetary return it could generate so as to attract more investors to purchase the fund. Consequently, the adoption of *Shariah* principles would likely be confined to just meeting the regulatory requirements to ensure that the fund continues to be accredited as *Shariah*-compliant. In this circumstance, the companies are not expected to devote significant amount of their resources to genuinely develop the Islamic fund industry, such as promoting the cause of *Shariah* objectives through their Islamic funds or creating an authentic Islamic-based fund or expanding the number of their *Shariah* trained investment or marketing personnel. Instead, the more likely scenario is that the Islamic funds are structured by mimicking conventional funds and handled by the same personnel who have little or no

knowledge of Islam or the *Shariah*. This will seriously impede the long-term development of the Islamic fund industry itself.

However, this analysis is neither intended to be provocative towards the real intention of fund management companies nor that did it mean to question the sincerity of the companies in their offering of Islamic funds. Rather, the purpose is to examine the real motivation of the fund management companies and how their intention is reflected through the overall handling of their Islamic funds. Nevertheless, since the real intention is not revealed clearly and is rather complicated to be determined precisely, a deduction process through direct and indirect interview questions, observations of the Islamic fund management operations and reference to the funds' prospectuses are used to infer the real intention.

8.3.3 What are the factors that contribute to the Islamic funds' performance?

While a typical Islamic fund is subject to similar systematic and unsystematic risks to those that affect a conventional fund, its performance may also be affected by the *Shariah* requirements which restrict its asset universe and increase its operating cost. Therefore, the hypothesis is that *Shariah* requirements affect Islamic fund performance adversely by restricting asset selection and introducing an additional cost to the fund. This research question intends to investigate this issue by determining the factors that affect Islamic fund performance including the impact of *Shariah* restrictions from the practitioners' perspective. This question is crucial in ascertaining the salient feature of Islamic fund performance and in establishing whether *Shariah* restrictions have indeed affected Islamic fund performance adversely. The analysis will also reveal how Islamic fund managers mitigate the *Shariah* effects and ensure that the return from their Islamic funds remains competitive or on a par with conventional funds. The factors affecting Islamic funds' performance are identified through deduction process in the data analysis based on direct and indirect interview questions.

8.3.4 What is the current nature of the *Shariah*-compliance practice by the fund management companies?

This research question is designed to examine the nature of the *Shariah*-compliance practice, particularly on how *Shariah* principles are appreciated and applied in the Islamic fund operations. This includes the underlying *Shariah* principles used in the creation of Islamic funds, the handling of Islamic fund accounts, the securities selection procedures of Islamic fund portfolios, the treatment of profit and distribution of income to the Islamic fund investors as well as the handling of *Shariah* matters, such as the setting-up of a *Shariah* advisory board and its roles. The interview also looks into the existing pool of human resources particularly the fund/investment manager and marketing personnel as well as the Islamic fund documentation and distribution network. The hypothesis is that if the Islamic fund is truly created to achieve the *Shariah* objectives, this will be reflected clearly through the *Shariah* principles applied in the creation and operation of the Islamic fund as well as in the commitment of fund management companies to develop *Shariah*-based fund products and expertise. Otherwise, the intention of the companies is arguably to merely fulfil the minimum regulatory requirements necessary to ensure that their Islamic funds remain *Shariah*-compliant. Findings are obtained through deduction process in the data analysis based on direct and indirect interview questions and from the Islamic fund prospectuses.

8.3.5 Is it necessary to develop an alternative portfolio performance measurement model specifically for Islamic funds?

This is a rather tactical question which aims to seek the industry practitioners' view of whether there is a need to develop a new alternative portfolio performance measurement model specifically for Islamic funds. Their view is crucial since the fund managers are the natural user of the proposed model if it is to be developed in the future. Their vast experience in fund management activities would also provide considerable input pertaining to the method used in portfolio performance measurement, the suitability or the shortcomings of the existing traditional portfolio performance valuation model and the additional variables that need to be taken into consideration when developing the alternative model. The hypothesis is that Islamic funds would require an alternative portfolio performance measurement model if there are serious flaws in the existing

models amid the *Shariah* restrictions. Findings for this research question are obtained from direct and indirect question to the respondents.

The five research questions were carefully designed to explore the current Islamic fund management practices particularly with regards to the impact of the *Shariah* restrictions on Islamic funds' characteristics and performance and to determine the need to develop an alternative portfolio performance measurement model. The interview transcripts are next examined in the data analysis stage as explained in the following section.

8.4 DATA ANALYSIS AND RESULTS DISCUSSION

This section comprises of two parts namely data analysis and results discussion. The data analysis topic elaborates the procedures involved in the analysis of interview transcripts through coding techniques. The findings from the data analysis are then deliberated in the results discussion topic with the aid of data display techniques to derive more comprehensive and reliable inferences from the interview data. Both processes are explained below.

8.4.1 Data Analysis

The data analysis attempts to extract valuable and meaningful information from the interview transcripts through coding analysis technique by conducting a qualitative perception analysis. The coding analysis starts with the creation of descriptive codes to provide basic meaning and categories for words or phrases used by respondents in the interview transcripts. Subsequently, first level codes were created to give interpretive meaning to the words or phrases. The final task in the coding stage is assigning pattern codes to enhance the inferential or explanatory power of the words or phrases retrieved from the descriptive and first level codes. All codes are shown in Table 8.1 below.

Table 8.1: List of Codes

Descriptive Codes	1st Level Codes	Pattern Codes	Question No.
FUND CHARACTERISTICS	**CHAR**		
CHAR: Staff expertise/ qualification:	CHAR-EXPT		1.1; 1.2
PG-Non Shariah.		CHAR-EXPT-PGNON	
UG-Non Shariah.		CHAR-EXPT-UGNON	
CHAR: Size:	CHAR-SIZE		1.4
Bigger.		CHAR-SIZE-BIG	
Smaller.		CHAR-SIZE-SMALL	
Not applicable.		CHAR-SIZE-NA	
Low subscription.		CHAR-SIZE-LOW	
CHAR: Fund type:	CHAR-TYPE		1.5; 1.6; 1.7
Shariah only.		CHAR-TYPE-SHAR	
Mixed.		CHAR-TYPE-MIXED	
CHAR: Client's profile:	CHAR-CLIENT		1.3; 1.8
All Muslims.		CHAR-CLIENT-ALM	
Mixed.		CHAR-CLIENT-MIX	
Long-term.		CHAR-CLIENT-LT	
Institutions.		CHAR-CLIENT-INST	
CHAR: Motivation to invest:	CHAR-MOTI		1.9
Religious.		CHAR-MOTI-RELIG	
Return/Risk.		CHAR-MOTI-RR	
Diversification.		CHAR-MOTI-DIVER	
Ethical.		CHAR-MOTI-ETHIC	
Directive (esp. insti'nal)		CHAR-MOTI-DIRECT	
CHAR: Motivation to offer:	CHAR-MOTO		1.10
Benefit for the *ummah.*		CHAR-MOTO-UMMA	
Economics (demand).		CHAR-MOTO-ECON	
Inherit.		CHAR-MOTO-INHER	
CURRENT SHARIAH PRACTICE	**PRAC**		
PRAC: Shariah principles applied:	PRAC-CONT		2.1; 2.4
Ba'i an-naqdi.		PRAC-CONT-BNAQ	
Al-wadiah.		PRAC-CONT-WADIA	
Al-wakalah.		PRAC-CONT-WAKA	
Fee based (Al-ujr).		PRAC-CONT-FEE	
Respondent doesn't know.		PRAC-CONT-DNTKN	
Al-Wa'ad.		PRAC-CONT-WAAD	
PRAC: Shariah principles on deposit:	PRAC-DEP		2.2
Al-wadiah.		PRAC-DEP-WADIA	
Not stated – assumed al-wadiah		PRAC-DEP-ASUWAD	
PRAC: Segregation of funds:	PRAC-SEGR		2.5
Yes.		PRAC-SEGR-YES	
Not applicable.		PRAC-SEGR-NA	
PRAC: Income purification:	PRAC-PURI		2.3; 2.6; 2.7
No.		PRAC-PURI-NO	
Yes – to charity.		PRAC-PURI-YESCHA	
Yes – to own non-Sharia funds.		PRAC-PURI-YESOWN	
Explained in prospectus:			
Yes		PRAC-PUREX-YES	
No		PRAC-PUREX-NO	

Descriptive Codes		1st Level Codes	Pattern Codes	Question No.
PRAC:	Types of instruments invested in:	PRAC-INST		2.8; 2.10
	Equities, bonds, cash, MM.		PRAC-INST-EBCMM	
	Derivative – Yes.		PRAC-INST-DERVY	
	Derivative – No.		PRAC-INST-DERVN	
	Proportion – Varies.		PRAC-INST-VARIES	
PRAC:	FM manages both funds:	PRAC-FM		2.9
	Yes.		PRAC-FM-YES	
	Not applicable.		PRAC-FM-NA	
PRAC:	Allow non Muslim FM:			
	Yes.		PRAC-FM-NMYES	
	No.		PRAC-FM-NMNO	
SHARIAH MONITORING AND SUPERVISION		**MONI**		
MONI:	Full Shariah compliant:	MONI-COMP		3.1
	Yes.		MONI-COMP-YES	
	Partly.		MONI-COMP-PART	
MONI:	Have a Shariah advisory board:	MONI-SAB		3.2; 3.3
	Yes – own board.		MONI-SAB-INT	
	Yes – 3rd party (sharing).		MONI-SAB-EXT	
MONI:	The primary role of SAB.	MONI-ROLE		3.4
	Advice on Shariah matters only.		MONI-ROLE-SHAR	
MONI:	Shariah checking:	MONI-CHEK		3.5; 3.6; 3.7
	Regular meeting (Qtr).		MONI-CHEK-QTRM	
	Self-checking by FMs.		MONI-CHEK-SFCHK	
MONI:	Depend on the SC list:	MONI-SCLIST		3.8
	Yes.		MONI-SCLIST-YES	
PERFORMANCE OF SHARIAH FUNDS		**PERF**		
PERF:	Performance of Islamic fund:	PERF-RATE		4.1
	Excellent/Good.		PERF-RATE-OUTBEN	
	Underperformed.		PERF-RATE-UNDER	
PERF:	Islamic vs conventional fund:	PERF-COMP		4.2
	There is difference.		PERF-COMP-DIFFER	
	There is no difference.		PERF-COMP-NODIF	
	Long term – similar.		PERF-COMP-LTSIM	
	Short term – different.		PERF-COMP-STDIF	
PERF:	Main factors affecting perform:	PERF-FACTOR		4.3
	Asset allocation.		PERF-FACTOR-ALLO	
	Timing.		PERF-FACTOR-TIME	
	Stock selection.		PERF-FACTOR-PICK	
	Market condition.		PERF-FACTOR-MKT	
	Tactical strat/Execution.		PERF-FACTOR-STGY	
	Shariah fees.		PERF-FACTOR-SHFE	
PERF:	Criteria for asset allocation:	PERF-ALLOC		4.4
	Big cap, high liquidity.		PERF-ALLOC-LRGE	
	Good fundamental.		PERF-ALLOC-GDFTL	
	Small cap not preferred.		PERF-ALLOC-NOSM	

Descriptive Codes		1st Level Codes	Pattern Codes	Question No.
PERF:	Company do self-valuation:	PERF-SELVAL		4.5
	Yes.		PERF-SELVAL-YES	
	No.		PERF-SELVAL-NO	
	3rd party.		PERF-SELVAL-3PTY	
PERF:	Use the standard methods:	PERF-STDVAL		4.6
	Yes.		PERF-STDVAL-YES	
	No.		PERF-STDVAL-NO	
PERF:	Benchmark for valuation:	PERF-BENCH		4.7
	FBM Emas Shariah Index.		PERF-BENCH-SHIDX	
	Al-Mudharabah GIA.		PERF-BENCH-FDIS	
	Conventional GIA.		PERF-BENCH-FDCV	
NEW ALTERNATIVE PERFORMANCE MODEL		**ALT**		
ALT:	Return and risk are:	ALT-RRCHAR		5.1
	Similar.		ALT-RRCHAR-SAME	
	Different.		ALT-RRCHAR-DIFF	
ALT:	Shariah reduces asset universe:	ALT-REDUNI		5.2; 5.3
	Yes		ALT-REDUNI-YES	
	No		ALT-REDUNI-NO	
ALT:	Shariah reduce performance:	ALT-REDRET		5.4
	Yes.		ALT-REDRET-YES	
	No.		ALT-REDRET-NO	
ALT:	Shortfall in valuation models:	ALT-SHTFAL		5.5
	Religious/Shariah elements.		ALT-SHTFAL-RELIG	
	No shortfall.		ALT-SHTFAL-NOSHF	
ALT:	Suitable for Islamic funds:	ALT-SUIT		5.6
	Yes.		ALT-SUIT-YES	
	Probably.		ALT-SUIT-PROBLY	
ALT:	Is the alternative models needed:	ALT-WHY		5.7; 5.8
	Yes, because:			
	Industry is growing.		ALT-WHYES-INGRO	
	Need for an identity.		ALT-WHYES-IDNTY	
	For academic purpose.		ALT-WHYES-ACAD	
	No, because:			
	Not needed/practical.		ALT-WHYNO-NOND	
	Lack of infrastructure.		ALT-WHYNO-NOINF	
	Lack of demand - size.		ALT-WHYNO-NODD	
	Existing models sufficient.		ALT-WHYNO-EXOK	
ALT:	Factors to be incorporated:	ALT-ADDVAR		5.9
	Shariah element.		ALT-ADDVAR-SHA	
	Shariah rating.		ALT-ADDVAR-RAT	
	Intention.		ALT-ADDVAR-INTN	
	CSR practices.		ALT-ADDVAR-CSR	
	No suggestion.		ALT-ADDVAR-NOS	

The coding and decoding analysis is explained in the following section which provides a descriptive analysis of the outcome from the interviews.

8.4.1.1 What are the general characteristics and operations of the Islamic funds?

This section analyses the responses given by participating fund managers who represent their respective fund management companies (FMC) on issues pertaining to the general characteristics and operations of their Islamic funds. The coding analysis reveals that the responses can be categorised into six focussed coding groups from which the general characteristics of Islamic funds currently available in the market can be established. The six focussed coding groups are: fund size and type, asset universe, *Shariah*-compliance practice, personnel, return and risk performance, and investors' motives. The coding analysis is summarised in Tables 8.2(a) to Table 8.2(g) below.

Table 8.2(a): Data Analysis for Research Question 1

Research Question 1	**What are the general characteristics and operations of the Islamic funds?**	
Focussed Coding	**1st Level Coding**	**Sub-Themes/Remarks**
1	CHAR-SIZE CHAR-TYPE	Characteristics based on the size and types of funds offered: • The size of Islamic funds is smaller than conventional funds. • The size of Islamic funds is bigger than conventional funds. • Islamic funds have low subscription rate • Offered both Islamic and conventional funds. • Offered Islamic funds only.
2	MONI-SCLIST PERF-ALLOC PRAC-INST	Characteristics based on the asset universe of Islamic fund portfolio: • Depend on the SC list of approved *halal* stocks for equities. • Invest in fundamentally sound stocks particularly large-capitalised and high liquidity stocks. • Invest in derivative securities for hedging purposes.
3	MONI-COMP MONI-SCLIST MONI-SAB PRAC-SEGR PRAC-PURI PRAC-CONT	Characteristics based on the current *Shariah* compliance practices in fund management companies: • Full compliant based on *Shariah* guidelines by the SC. • Adherence to SC list of *halal*–approved stocks. • Separation of funds and investment accounts. • Engage *Shariah* scholars. • Regular *Shariah* monitoring by *Shariah* advisory board. • Investment income is purified. • No profit and loss sharing-based (PLS) contract. FMCs charged Islamic funds on fee-based basis.

4	CHAR-EXPT PRAC-FM	Characteristics based on the personnel handling the Islamic funds: • Muslim fund managers only. • Mixed between Muslims and non-Muslims fund managers. • Completed undergraduate education but with no *Shariah* qualification. • Completed postgraduate education but with no *Shariah* qualification.
5	PERF-RATE PERF-COMP ALT-RRCHAR	Characteristics based on return and risk of Islamic funds: • Outperformed own benchmark. • Underperformed conventional funds. • No significant difference between performance of Islamic fund and conventional fund. • The performance of Islamic fund is different than conventional fund. • Return and risk are similar with conventional. • Return and risk are different from conventional.
6	CHAR-MOTI	Characteristics based on the motivation that encourage investors to subscribe into Islamic funds: • Religious • Return and risk consideration • Diversification • Ethical • Directive from government
Concluding Theme	**Islamic funds are essentially funds that adhere to *Shariah* guidelines but are not treated exclusively different from conventional funds by fund management companies. Islamic funds are particularly characterised by their *Shariah* identities but tend to be smaller in size and have lower fund subscription rate while their performance is below than that of conventional funds. Investors subscribed into Islamic fund for economic and religious reasons.**	

Table 8.2(b): Focussed Coding No. 1 for Research Question 1

Sub-Theme	**Characteristics based on the size and types of funds offered.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1	CHAR-TYPE-SHAR	• Offers Islamic funds only.
FMC2 FMC3 FMC6 FMC7	CHAR-SIZE-SMALL CHAR-TYPE-MIXED CHAR-SIZE-LOW	• The size of Islamic funds is smaller than conventional funds. • Offered both Islamic and conventional funds. • Islamic funds have low subscription rate.
FMC4 FMC5	CHAR-SIZE-BIG CHAR-TYPE-MIXED CHAR-SIZE-LOW	• The size of Islamic funds is bigger than conventional funds. • Offered both Islamic and conventional funds. • Islamic funds have low subscription rate.

Table 8.2(c): Focussed Coding No. 2 for Research Question 1

Sub-Theme	**Characteristics based on the asset universe of Islamic fund portfolio.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1 – FMC7	MONI-SCLIST-YES	Depend on the SC list of *halal*-approved stocks for equity investment.
FMC1 – FMC7	PERF-ALLOC-GDFTL	Invest in fundamentally sound stocks particularly large-capitalised and high liquidity stocks.
FMC2 FMC3 FMC5 FMC7	PRAC-INST-DERV	Invest in derivative securities for hedging purposes.

Table 8.2(d): Focussed Coding No. 3 for Research Question 1

Sub-Theme	**Characteristics based on the current *Shariah*-compliance practices in fund management companies.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1 – FMC7	MONI-COMP-YES MONI-SCLIST-YES PRAC-SEGR-YES MONI-SAB-INT MONI-SAB-EXT PRAC-PURI-YES	• Full compliant based on *Shariah* guidelines by the SC. • Adherence to the SC list of *halal* stocks. • Separation of funds and investment accounts. • Engage *Shariah* scholars. • Regular *Shariah* monitoring by *Shariah* advisory board. • Investment income is purified. • No profit and loss sharing-based (PLS) contract.

Table 8.2(e): Focussed Coding No. 4 for Research Question 1

Sub-Theme	**Characteristics based on the personnel handling the Islamic funds.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1	PRAC-FM-NMNO	Islamic funds are handled by Muslim investment managers only.
FMC2 – FMC7	PRAC-FM-NMYES	Islamic funds are also handled by non-Muslim fund managers.
FMC1 – FMC7	CHAR-EXPT-UGNON	All investment managers completed at least undergraduate education level but have no *Shariah* qualification.
FMC4 – FMC7	CHAR-EXPT-PGNON	Some investment managers completed their postgraduate education level but have no *Shariah* qualification.

Table 8.2(f): Focussed Coding No. 5 for Research Question 1

Sub-Theme	**Characteristics based on return and risk of Islamic funds.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1	PERF-RATE-OUTBEN PERF-COMP-DIFFER ALT-RRCHAR-SAME	• Outperformed own benchmark. • The performance of Islamic fund is different than conventional fund. • Return and risk are similar with conventional.
FMC2 – FMC5	PERF-RATE- OUTBEN PERF-COMP-NODIF ALT-RRCHAR-SAME	• Outperformed own benchmark. • No significant difference between performance of Islamic fund and conventional fund. • Return and risk are similar with conventional.
FMC6	PERF-RATE-UNDER ALT-RRCHAR-DIFF	• Underperformed conventional funds. • Return and risk are different from conventional.
FMC7	PERF-RATE-UNDER PERF-COMP-DIFFER ALT-RRCHAR-DIFF	• Underperformed conventional funds. • The performance of Islamic fund is different than conventional fund. • Return and risk are different from conventional.

Table 8.2(g): Focussed Coding No. 6 for Research Question 1

Sub-Theme	**Characteristics based on the motivation that encourage investors to subscribe into Islamic funds.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1 – FMC7	CHAR-MOTI-RELIG	Religious reason.
FMC2 – FMC7	CHAR-MOTI-RR	Return and risk consideration.
FMC3	CHAR-MOTI-DIVERS	Diversification purposes.
FMC2 FMC6	CHAR-MOTI-ETHIC	Ethical
FMC7	CHAR-MOTI-DIRECT	Directive from government.

Table 8.2(b) shows the characteristics based on the size and type of Islamic funds. In general, most fund management companies offered both Islamic and conventional funds whereby the types and structure of their Islamic funds are not significantly different from their conventional funds judging from the funds' objectives and investment mandates. However, Islamic funds are relatively smaller in size and have a low subscription rate as compared to conventional funds. The low subscription rate is not only obvious in fund management companies that offer both Islamic and conventional funds but also for companies that specialises purely in Islamic funds or in which the approved size of their Islamic fund is bigger than their conventional funds.

Table 8.2(c) reveals the Islamic funds' characteristics based on their asset universe. All fund management companies relied upon the SC's list of *halal*-approved stocks for their equity investment and their *Shariah* advisory board (SAB) for other financial instruments. Islamic funds tend to invest in fundamentally sound stocks, particularly large-capitalised companies with stable earnings and high trading liquidity. A typical Islamic fund portfolio is usually heavily weighted towards plantation, construction and properties as their favourite sectors. Some fund management companies allow investment in derivative instruments on condition that such derivative securities must be *Shariah*-compliant whilst investment is made strictly for hedging purposes.

The *Shariah*-compliance practice shown in Table 8.1(d) is undoubtedly a characteristic unique to the Islamic funds. In general, all respondents claimed that their Islamic funds are fully *Shariah*-compliant. The *Shariah* guidelines require fund management companies to separate Islamic fund accounts from conventional fund accounts, appoint a *Shariah* advisory board, conduct regular *Shariah* monitoring and purify investment income. The segregation of funds however, does not necessarily require a separation of other functions or resources involved in the fund management operations such as office premises and equipment or personnel undertaking the accounts, marketing, administration or investment functions, since similar resources can be utilised or shared by both Islamic and conventional funds. Instead, the separation of funds merely involves the segregation of accounts in which any financial proceeds generated for or by Islamic funds are deposited into Islamic banking accounts. Another notable feature among the existing Islamic funds is that all funds are using a fee-based contract and not profit-and-loss sharing (PLS) despite the latter being preferred by the *Shariah*.

With respect to the personnel handling the Islamic funds, all but one fund management company allowed non-Muslim investment managers to handle their Islamic funds as reflected by Table 8.2(e). All fund managers have completed various academic disciplines in their education to at least undergraduate level and hold a fund management license issued by the SC. Unfortunately however, none of the investment managers have any formal *Shariah* academic qualification.

Table 8.2(f) highlights the return and risk characteristic of the Islamic funds. In terms of return, Islamic funds generally outperformed their own designated benchmarks

but underperformed conventional funds. Most fund managers believe that Islamic funds are not significantly different from conventional funds arguing that there are numerous stocks available within the SC's list of *halal*-approved securities that fund managers can choose from to meet their investment strategy. Hence, they contended that Islamic funds shall not be handicapped by the *Shariah* restrictions with respect to stock selection. On the contrary, some fund managers believe that Islamic funds' performance is significantly different from conventional funds since the funds incur a relatively higher operating cost and have a rather limited asset investment universe, making it difficult for Islamic funds to outperform conventional funds. In addition, Islamic funds are also subject to *Shariah* non-compliance risk, thus making the funds riskier than their conventional counterparts.

Islamic funds' investors could provide another unique characteristic for Islamic funds since those who subscribe into the funds are likely to be motivated by some other non-pecuniary motives beyond just the pursuit of monetary gains. The investors' commitment toward Islamic funds despite receiving relatively a lower return than conventional funds reflects that Islamic funds' investors are not excessively concerned about financial reward from the funds, as is normally perceived with economically rational investors, but they are also seeking other non-monetary satisfaction from their investment in the funds. Table 8.2(g) reveals five reasons that motivate investors to subscribe into Islamic funds, namely: religious preference, return and risk consideration, diversification strategy, ethical tendency, or simply due to directive from the government. Of all the reasons, religious and economic motives are the two main driving factors that encourage investors to choose Islamic funds.

To conclude, the existing Islamic funds are particularly characterised by their *Shariah* identities that make them different from conventional funds. However, the structure of Islamic funds resembles that of conventional funds in principle with the exception that they also comply with certain *Shariah* requirements. The main distinguishing factor is that Islamic funds generally have a limited asset investment universe since they invest only in *halal*-approved securities and are monitored by a *Shariah* advisory board. The size of Islamic funds is usually smaller and less subscribed when compared to conventional funds, whilst their performance is generally below the latter but higher than their self-designated benchmarks. Investors generally subscribe into

Islamic funds for economic and religious reasons. The following section analyses the real intention of the FMCs in offering Islamic funds.

8.4.1.2 What is the real intention of the fund management companies in offering Islamic funds?

This section analyses the responses related to the real intention of fund management companies in offering Islamic funds. The coding analysis reveals that the responses can be categorised into a single focussed coding group. Indeed, it is rather difficult to establish the real intention behind the Islamic fund offerings by fund management companies since the real intention is not measurable and the companies are legal entities rather than individual persons. Nevertheless, respondents were asked about their opinion of the possible motivation behind their companies' decision to offer Islamic funds and additional information was then obtained from further reading of their funds' prospectus. Findings from the two sources are then used to infer the real intention of the fund management companies. The coding analysis is summarised in Table 8.3(a) and Table 8.3(b) below.

Table 8.3(a): Data Analysis for Research Question 2

Research Question 2	**What is the real intention of the fund management companies in offering Islamic funds?**	
Focussed Coding	**1st Level Coding**	**Sub-Themes/Remarks**
1	CHAR-MOTO	Reasons for fund management companies to offer Islamic funds: • Religious • Economics • Inherited from previous management
Concluding Theme	**Economic reason is the main factor that motivates the fund management companies to offer Islamic funds although religious motive is also important.**	

Table 8.3(b): Focussed Coding No. 1 for Research Question 2

Sub-Theme	**Reasons for fund management companies to offer Islamic funds.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1 FMC4	CHAR-MOTO-UMMA	Religious reason for the benefit of the Muslim community (*umma*), in particular.
FMC1 – FMC7	CHAR-MOTO-ECON	Economic reason.
FMC5	CHAR-MOTO-INHER	Inherited from previous management.

There are three main reasons why the fund management companies offer Islamic funds. Certainly, religious reason would be the best possible intention when Islamic funds are offered with a noble aim of promoting the ideals of Islamic teachings such as the attainment of the *maqasid al-Shariah* (the objectives of the *Shariah*) or to benefit the Muslim *umma* (society) by providing them an investment instrument that meets their religious requirements, allowing them to invest freely without having to compromise their religious beliefs. However, only two respondents have explicitly mentioned the religious intention. Instead, the more popular motive was, arguably, economic-related reasons whereby fund management companies primarily seek to capitalise on the growing interest towards Islamic finance and banking industry to make more profit by offering Islamic funds. Some respondents argued that Islamic funds may be viewed by fund management companies as just another product or as a marketing tool to enhance their competitive advantage or enlarge their market share in the unit trust industry. The ultimate pursuit of profit is made clear by some respondents through their admission that financial considerations usually undermine religious intention; fund management companies are unlikely to offer Islamic funds if it is not economical or there is no cost-benefit to be earned. The intention to invest in derivative securities and the income purification approach that allows fund management companies to retain non-*halal* stocks in their Islamic fund portfolio until the stocks reach their breakeven price for disposal further supports the contention that economic considerations are always a priority to fund management companies, even when dealing with Islamic funds. Meanwhile, one respondent claimed that his Islamic funds were actually inherited from the previous management following a corporate restructuring.

To conclude, economic-related reasons, namely to maximise profit by capitalising on the growing interest on Islamic fund investments, enhancing the fund management companies' competitive advantage as well as marketing strategy, are arguably the main motives behind fund management companies' offering Islamic funds, whilst religious reason unfortunately seems to be a secondary motive. This perception is based on the fund management companies' willingness to offer Islamic funds *only* if it is profitable to do so or if the fund enhances their competitive advantage. One of the main economic concerns is a good performance which is also vital for Islamic funds. The following section analyses the factors affecting Islamic funds' performance.

8.4.1.3 What are the factors that contribute to the Islamic funds' performance?

This section analyses the responses related to factors influencing the Islamic funds' performance. The coding analysis reveals that the responses can be categorised into four focussed coding groups namely fund managers' special investment skills, economic and market condition, fund managers' stock selection approach, and *Shariah*-compliance effect. The coding analysis is summarised in Table 8.4(a) to Table 8.4(e) below.

Table 8.4(a): Data Analysis for Research Question 3

Research Question 3	**What are the factors that contribute to the Islamic funds' performance?**	
Focussed Coding	**1st Level Coding**	**Sub-Themes/Remarks**
1	PERF-FACTOR	Fund managers' special investment skills: • Superior asset allocation skill. • Good timing skill when buying or selling securities. • Exceptional sector and stock selection. • Excellent trading/execution strategy.
2	PERF-FACTOR	Economic and market condition: • General economic and market condition (systematic risk).
3	PERF-ALLOC	Fund managers' stock selection approach: • Emphasise on fundamentally sound stocks. • Focus on large-capitalised and highly liquid stocks. • Less interested in small-capitalised stocks.
4	PERF-FACTOR ALT-REDUNI ALT-REDRET	*Shariah*-compliance effect: • *Shariah* requirements caused administrative cost to increase and add new risk into the Islamic funds. • Asset universe of Islamic funds is reduced by the *Shariah* restrictions. • *Shariah* restrictions reduce Islamic fund performance.
Concluding Theme	**Islamic funds' performance is significantly influenced by fund managers' special investment skills, general market condition, stock selection approach of the fund managers, and consequences of *Shariah*-compliance. Arguably, the most crucial is fund managers' special investment skills as it enables the fund managers to outperform in any given market condition. The *Shariah*-compliance effect however, has a rather adverse impact on the Islamic funds' performance.**	

Table 8.4(b): Focussed Coding No. 1 for Research Question 3

Sub-Theme	**Fund managers' special investment skills.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1	PERF-FACTOR-ALLO PERF-FACTOR-TIME	• Superior asset allocation skill. • Good timing skill to buy or sell securities.
FMC2	PERF-FACTOR-ALLO	• Superior asset allocation skill.
FMC3	PERF-FACTOR-ALLO PERF-FACTOR-TIME PERF-FACTOR-STGY	• Superior asset allocation skill. • Good timing skill to buy or sell securities. • Excellent trading/execution strategy.
FMC4	PERF-FACTOR-ALLO PERF-FACTOR-PICK	• Superior asset allocation skill. • Exceptional sector and stock selection.
FMC5	PERF-FACTOR-TIME PERF-FACTOR-PICK PERF-FACTOR-STGY	• Good timing skill to buy or sell securities. • Exceptional sector and stock selection. • Excellent trading/execution strategy.

Table 8.4(c): Focussed Coding No. 2 for Research Question 3

Sub-Theme	**Economic and market condition.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1	PERF-FACTOR-MKT	General economic and market condition (systematic risk).

Table 8.4(d): Focussed Coding No. 3 for Research Question 3

Sub-Theme	**Fund managers' stock selection approach.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1 – FMC7	PERF-ALLOC-GDFTL	Emphasise on fundamentally sound stocks.
FMC1, FMC6	PERF-ALLOC-LRGE	Focus on large-capitalised and highly liquid stocks.
FMC1 – FMC5	PERF-ALLOC-NOSM	Less interested in small-capitalised stocks.

Table 8.4(e): Focussed Coding No. 4 for Research Question 3

Sub-Theme	**Shariah-compliance effect.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1	ALT-REDUNI-YES ALT-REDRET-YES	• Asset universe of Islamic fund is reduced by the *Shariah* restrictions. • *Shariah* restrictions reduce Islamic fund performance.
FMC6	PERF-FACTOR-SHFE	• *Shariah* requirements caused administrative cost to increase and add new risk into Islamic fund.
FMC7	PERF-FACTOR-SHFE ALT-REDUNI-YES	• *Shariah* requirements caused administrative cost to increase and add new risk into Islamic fund. • Asset universe of Islamic fund is reduced by *Shariah* restrictions.

Among the four factor categories shown in Table 8.4(b), fund managers' special investment skill is arguably the most critical to the performance of Islamic funds. The crucial skills are: superior asset allocation, good timing, exceptional sector and stock selection, as well as excellent trading/execution strategy. The asset allocation skill refers to the ability of a fund manager to achieve the right mixture or proportion of various assets that will benefit the most from a given market condition. Hence, a fund manager who has superior asset allocation skill is likely to outperform the overall market or his/her rivals by ingeniously altering his/her portfolio's asset composition to suit the changing market environment. A good timing skill is the ability to determine when is the best time to buy or sell securities which enable a fund manager to minimise purchasing cost by buying securities at their lowest possible price, or maximise return from capital appreciation by selling securities at their highest possible price. The sector and stock selection skill is the ability to identify and choose profitable industries or underpriced securities. A fund manager with an exceptional sector and stock selection skill will be able to maximise return for his/her portfolio by choosing the right industries or stocks that will outperform the market over a certain period of time. The trading/execution skill refers to trading adeptness of a fund manager. An excellent trading/execution skill enables a fund manager to maximise return for his/her portfolio by minimising transaction cost, attaining the best average buying or selling price – especially for bulk trading or transactions involving a large amount of shares – or by determining the best time to execute a buy or sell order. Notwithstanding however, the respondents almost unanimously agreed that a superior asset allocation skill was the most critical to ensuring good performance. An Islamic fund manager who possesses this skill has a greater chance to outperform the overall market or other rival funds. Some respondents even argued that any shortcomings endured by Islamic funds caused by the *Shariah* restrictions can be remedied through superior asset allocation skills since the skill enables Islamic fund managers to achieve the best portfolio mix within the Islamic funds' investment mandate to generate equivalent return with conventional funds.

One respondent cited the general economic and market condition as a factor that influenced Islamic funds' performance as shown in Table 8.4(c). The general economic and market condition is a systematic risk which is non-diversifiable and affects all financial instruments, unit trusts or mutual funds and business entities operating in the same market. The risk includes changes in business or economic cycles, regulatory

structures, political stability and shifts in market sentiment or consumer taste. An Islamic fund manager however, may be able to reduce the negative impact from the risk by anticipating the possible changes in general economic or market conditions and instigating remedial measures to protect the value of his/her portfolio. Thus, possessing the ability to accurately predict the general economic and market condition and formulate appropriate actions in response to the anticipated changes would enable the Islamic fund manager to lessen the impact of the risk on his/her portfolio.

Performance of Islamic funds is also influenced by their fund managers' stock selection approach. Table 8.4(d) reveals that all respondents place emphasis on fundamentally sound stocks such as those that have a solid financial standing with steady profit and dividend track record, excellent business and market prospects, competent management team, and attractive earnings growth potential. The favourite stocks are large-capitalised – since these stocks are generally very stable and less risky – and highly liquid. High liquidity ensures that there is continuous trading in these stocks, through which, the fund managers will be able to buy or sell the stocks easily in the stock market without suffering huge price differentials. Focussing on large-capitalised stocks also brings additional advantage in view that these stocks are closely monitored by external research houses, from which, the fund management companies are able to access in-depth information and company analysis without having to hire investment research analysts internally, thus reducing operational cost and research time. On the other hand, small-capitalised stocks are less preferred by the fund managers due to the stocks' high price volatility, lower trading liquidity and information asymmetry caused by lack of research or company analysis on smaller size stocks. By focussing primarily on fundamentally sound stocks, Islamic funds could expect reasonable and consistent return generated from dividend income or capital appreciation earned from these companies.

The other influencing factor, but with a rather adverse consequences on Islamic funds' performance, is the *Shariah*-compliance effects as shown in Table 8.4(e). Islamic funds are prohibited by the *Shariah* guidelines from investing in companies involved in any non-*halal* activities either directly or indirectly through their subsidiary companies, or in companies whose majority of their earnings are derived from non-*halal* sources (including interest income). Consequently, the *Shariah* restrictions effectively reduce the asset universe of Islamic funds by confining their investment into *halal*-approved

securities, ruling out investment in companies involved in conventional finance, gaming and conglomerates, despite their attractive return. Since conglomerates and finance-related companies are mostly large-capitalised stocks, *Shariah* restrictions have practically denied the Islamic funds access to these companies, hence forcing the funds to focus on rather conservative industries such as plantations and properties sectors. Fund management companies offering Islamic funds are also required to appoint *Shariah* scholars for advisory services on matters pertaining to *Shariah*-compliance issues. The service can either be sourced internally by hiring their own *Shariah* scholars or outsourced externally from a third-party institution providing such services. Either way, engaging *Shariah* scholars will certainly increase operating costs, thus reducing return from the Islamic funds, putting the funds in disadvantaged position when their return is compared directly with the return from conventional funds or the market index. In addition, there is a *Shariah*-compliance risk which is unique to Islamic funds. It is a risk associated with the changes in the *halal* status whereby a company which was originally approved as *halal* has its permissible status revoked due to some material changes in its core business activities, thus effectively turning it into a non-*halal* stock, instead. Following the withdrawal of the *halal*-approved status, Islamic funds are obliged to dispose of any holding interest that they have in the company. However, depending on the market condition, there is a probability that Islamic funds may suffer substantial losses if the price of the stock is below their original buying or breakeven price, or if the Islamic funds are forced to keep the stock while waiting for the right timing for its disposal without being able to enjoy any income generated from the stock throughout the duration after which it was declared non-*halal*.

To conclude, Islamic funds' performance is substantially influenced by fund managers' special investment skills, general market condition, the stock selection approach of the fund managers, and *Shariah*-compliance effects. The latter, in particular, is unique to Islamic funds and is more likely to affect the funds' performance adversely. Therefore, any attempt to compare the performance of both Islamic and conventional funds directly is poised to be biased against the Islamic funds. The following section analyses the current state of the *Shariah*-compliance practice by fund management companies.

8.4.1.4 What is the current nature of the *Shariah*-compliance practice by the fund management companies?

This section analyses the responses related to the *Shariah*-compliance practice. The coding analysis reveals that the responses can be categorised into five focussed coding groups, namely: the *Shariah*-compliance status, the dependency towards the SC's list of *halal*-approved securities, the *Shariah* advisory board, the *Shariah* monitoring practice, and the segregation between Islamic and conventional funds. The coding analysis is summarised in Table 8.5(a) to Table 8.5(f) below.

Table 8.5(a): Data Analysis for Research Question 4

Research Question 4	**What is the current nature of the *Shariah*-compliance practice by the fund management companies?**	
Focussed Coding	**1st Level Coding**	**Sub-Themes/Remarks**
1	MONI-COMP	Fund management operation is fully *Shariah*-compliant.
2	MONI-SCLIST	Use the SC's list as reference for the approved *halal* securities.
3	MONI-SAB	Engaged *Shariah* scholars through a *Shariah* advisory board (SAB): • Internal SAB. • External SAB.
4	MONI-CHEK	Frequency of *Shariah* monitoring: • Quarterly *Shariah* review between FMC and SAB. • Internal self-checking for *Shariah* compliance by investment officer and audit personnel.
5	PRAC-SEGR PRAC-DEP	Accounts of Islamic fund is separated from conventional fund: • Both funds are separated. • Islamic fund uses Islamic bank account.
Concluding Theme	**All existing Islamic funds have been certified *Shariah*-compliant by the SC. The current practice reveals a separation of roles between *Shariah* advisory boards (SAB) and investment committee of fund management companies. The boards have a rather limited responsibility and involvement but deemed adequate with regards to ensuring the existing Islamic funds remain *Shariah*-compliant. The concern towards higher cost and lack of investment and development in *Shariah* practice indicates that fund management companies are merely fulfilling the minimum regulatory requirement for *Shariah*-compliance.**	

Table 8.5(b): Focussed Coding No. 1 for Research Question 4

Sub-Theme	**Fund management operation is fully *Shariah*-compliant.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1 – FMC6	MONI-COMP-YES	Yes.
FMC7	MONI-COMP-PART	Partly.

Table 8.5(c): Focussed Coding No. 2 for Research Question 4

Sub-Theme	**Use the SC's list as reference for the *halal*-approved securities.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1 – FMC7	MONI-SCLIST-YES	Yes.

Table 8.5(d): Focussed Coding No. 3 for Research Question 4

Sub-Theme	**Engaged *Shariah* scholars through a *Shariah* advisory board (SAB).**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1 – FMC3	MONI-SAB-INT	Internal SAB.
FMC4 – FMC7	MONI-SAB-EXT	External SAB.

Table 8.5(e): Focussed Coding No. 4 for Research Question 4

Sub-Theme	**Frequency of *Shariah* monitoring.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1 – FMC7	MONI-CHEK-QTRM	Quarterly *Shariah* review between FMC and SAB.
FMC1	MONI-CHEK-SFCHK	Internal self-checking for *Shariah*-compliance by investment officers and audit personnel.

Table 8.5(f): Focussed Coding No. 5 for Research Question 4

Sub-Theme	**Account of Islamic fund is separated from conventional fund.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC2 – FMC7	PRAC-SEGR-YES	Both funds are separated.
FMC1 FMC4	PRAC-DEP-WADIA	Islamic fund uses Islamic bank account.

The analysis into the *Shariah*-compliance status of the Islamic funds begins with the participating fund managers being asked a tactical question about whether their Islamic funds are fully *Shariah*-compliant. Table 8.5(b) highlights that all but one fund manager confidently claimed that their Islamic funds are fully *Shariah*-compliant. Notwithstanding however, further review on the respondents' fund prospectuses reveals that their Islamic funds have been approved by the SC, thus confirming that all the funds have indeed complied with the *Shariah* guidelines. Therefore, the rather contradictory reply given by a fund manager which seems to suggest that his Islamic fund is partly *Shariah*-compliant actually refers to the mixture of both conventional and Islamic funds offered by his company rather than it implying that his Islamic fund is not fully *Shariah*-compliant.

Table 8.5(c) indicates that all fund managers are using the list of *halal*-approved stocks issued by the SC's *Shariah* Advisory Council (SCSAC). The list, which is issued

on a regular basis by the SCSAC and considered the most important reference for the list of *halal*-approved stocks in Malaysia, significantly reduces the burden of identifying *halal* stocks from fund management companies, thus avoiding any possible confusion resulting from the various different sets of list that would arise if each fund management company was forced to produce their own individual list of *halal*-approved stocks. It also enables fund management companies to focus on fund management and trading activities rather than spending their resources on research for permissible stocks which can be a very costly and time consuming effort.

Table 8.5(d) confirms that all fund management companies are engaging *Shariah* scholars through a *Shariah* advisory board (SAB). Three of the fund management companies hired their own *Shariah* scholars whilst four companies outsourced their *Shariah* experts from a third party. The members and the roles of the SAB are stated clearly in their fund prospectus. In general, the members usually comprise of senior *Shariah* scholars with vast experience or formal academic qualification in a *Shariah*-related discipline but arguably have very limited knowledge on fund management or investment operations. Hence, the SAB is principally responsible in giving advisory services specifically on *Shariah*-related matters to fund management companies, including *Shariah* valuation and approval for new financial products introduced by the companies as well as *Shariah* monitoring through regular or ad-hoc meetings. The SAB however, is not involved actively in the day-to-day operations of the fund management companies. Several respondents asserted that to date there has not been a conflict between them and their SAB.

The current *Shariah* monitoring practice is shown in Table 8.5(e). The level of monitoring is considered adequate with all fund management companies having regular quarterly *Shariah*-compliance reviews with their SAB. In addition, all fund management companies stated that they maintain close communication with their SAB members and conduct ad-hoc meetings whenever necessary. However, only one fund management company's investment officers and audit personnel undertook internal self-checking of *Shariah*-compliance status. This rather distinguishing practice is probably because the company is a subsidiary of an established Islamic banking group with an all-Muslim staff, including its fund managers, and specialises only in Islamic funds. Therefore, this

company can be expected to have greater awareness and appreciation towards the *Shariah*.

For fund management companies offering both Islamic and conventional funds, all transactions involving the two funds are managed using separate accounts as revealed by Table 8.5(f). In this respect, all financial transactions including proceeds from unit trust subscription, investment income earned by Islamic funds and dividend payment to unit holders are undertaken through Islamic banking accounts. However, this segregation only applies to financial accounts and does not affect other company's resources such as manpower, support services and back-office operations. For instance, the marketing officer or unit trust agent who promotes the Islamic funds on behalf of the fund management companies is likely to promote their conventional funds as well. Likewise, the operation of the Islamic funds is carried out from the same office premises and shares similar facilities with the operation of conventional funds.

To conclude, the approval granted by the SC implies that the existing Islamic funds are indeed *Shariah*-compliant. The current practice of fund management companies is to use the SC's list of *halal*-approved stocks as their primary source of reference for their equity investment, while separating their Islamic fund accounts from their conventional fund accounts. The other companies' resources however, including personnel and office facilities are normally shared by or utilised for both types of fund. Since fund management companies are lacking in *Shariah* expertise, they have to appoint *Shariah* scholars who sit in the *Shariah* advisory board to advise them on *Shariah*-related issues pertaining to their Islamic funds' operation. The SAB however, has a rather limited role and authority as it merely provides advisory services on *Shariah* matters and is not usually involved actively in the day-to-day functions of fund management companies, especially with respect to their investment operation. Hence, there is a clear separation of role between the *Shariah* advisory board and fund management companies, whilst the limited understanding and commitment to develop *Shariah* infrastructure within the fund management companies has resulted in a lack of genuine development in the Islamic fund industry. This is due to the relatively small market size and the high cost involved which is feared to affect their Islamic funds' performance adversely. The following section discusses the fund performance valuation model.

8.4.1.5 Is it necessary to develop an alternative portfolio performance measurement model specifically for Islamic funds?

This section analyses the responses on issues pertaining to the necessity of developing an alternative portfolio performance measurement model for Islamic funds. The coding analysis reveals that all responses can be categorised into three focussed coding groups namely the impact of *Shariah* requirements on Islamic funds' performance and the rationale for either supporting or rejecting the idea to develop an alternative portfolio measurement model specifically for Islamic fund. The coding analysis is summarised in Table 8.6(a) to Table 8.6(d) below.

Table 8.6(a): Data Analysis for Research Question 5

Research Question 4	**Is it necessary to develop an alternative portfolio performance measurement model specifically for Islamic funds?**	
Focussed Coding	**1st Level Coding**	**Sub-Themes/Remarks**
1	PERF-FACTOR ALT-REDRET	Impact of *Shariah* requirements on fund performance: • Higher administrative cost due to engaging *Shariah* scholars. • Additional *Shariah* non-compliance risk. • Reducing Islamic fund performance.
2	ALT-WHYES	Why a new alternative portfolio measurement model is needed: • For future use as the industry is growing. • For own identity and proper measurement. • For academic purposes.
3	ALT-WHYNO	Why a new alternative portfolio measurement model is not needed: • Not needed/practical. • Lack of infrastructure. • Lack of demand. • Existing model is sufficient.
Concluding Theme	***Shariah* restrictions have affected Islamic funds' performance rather unfavourably. However, feedbacks from industry practitioners imply that a new alternative portfolio measurement model is considered not necessary *at the moment*. Instead, there is a need to assess the extent to which *Shariah* principles are being implemented by fund management companies.**	

Table 8.6(b): Focussed Coding No. 1 for Research Question 5

Sub-Theme	**Impact of *Shariah* requirements on fund performance.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1	ALT-REDUNI-YES ALT-REDRET-YES	• Asset universe of Islamic fund is reduced by *Shariah* restrictions. • Reducing Islamic fund performance.

FMC6	PERF-FACTOR-SHFE ALT-REDRET-YES	• Higher administrative cost due to engaging *Shariah* scholars. • Additional *Shariah* non-compliance risk. • Reducing Islamic fund performance.
FMC7	PERF-FACTOR-SHFE ALT-REDRET-YES	• Higher administrative cost due to engaging *Shariah* scholars. • Additional *Shariah* non-compliance risk. • Reducing Islamic fund performance.

Table 8.6(c): Focussed Coding No. 2 for Research Question 5

Sub-Theme	**Why a new alternative portfolio measurement model is needed.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1	ALT-WHYES-IDNTY	For own identity and proper measurement.
FMC4	ALT-WHYES-INGRO ALT-WHYES-IDNTY	• For future use as the industry is growing. • For own identity and proper measurement.
FMC3 FMC5	ALT-WHYES-ACAD	For academic purposes.

Table 8.6(d): Focussed Coding No. 3 for Research Question 5

Sub-Theme	**Why a new alternative portfolio measurement model is not needed.**	
Interview No.	**Pattern Coding**	**Remarks**
FMC1	ALT-WHYNO-NOINF ALT-WHYNO-NODD	• Lack of infrastructure. • Lack of demand.
FMC3	ALT-WHYNO-NOND ALT-WHYNO-NODD ALT-WHYNO-EXOK	• Not needed/practical. • Lack of demand. • Existing model is sufficient.
FMC4	ALT-WHYNO-EXOK	• Existing model is sufficient.
FMC5	ALT-WHYNO-NOND	• Not needed/practical.
FMC2 FMC6 FMC7	ALT-WHYNO-NOND ALT-WHYNO-EXOK	• Not needed/practical. • Existing model is sufficient.

While *Shariah* requirements imposed on Islamic funds make the funds philosophically different from conventional funds, the religious constraints also have some unfavourable impact on the performance of the funds. As highlighted in Table 8.6(b), *Shariah* requirements cause the operating cost of Islamic fund to increase due to the need to appoint *Shariah* scholars; reduce the funds' asset universe since only *halal*-approved securities can be included in their portfolio; and bring in the *Shariah* non-compliance risk to Islamic funds. None of these shortcomings are known to affect conventional funds. Consequently, the potential return from Islamic funds is poised to be lower than return from conventional funds although Islamic funds may still be able to outperform their own designated benchmarks.

Table 8.6(c) and 8.6(d) reveal the fund managers' replies to question on whether there is a need to develop an alternative portfolio performance measurement model specifically for Islamic funds. Respondents who supported the idea argued that the alternative valuation model will give the Islamic fund industry its unique identity which is needed to refute the allegation that Islamic funds merely mimic conventional funds. The new model is envisaged to give a more accurate measurement of Islamic funds' performance by incorporating variables which are relevant to Islamic funds but neglected by the traditional portfolio performance measurement models. In particular, respondents have identified the additional variables as including religious attributes, *Shariah* effects, real intention, corporate social responsibility (CSR) and ethical factors. Some respondents contended that in view of the growing interest in the Islamic fund industry, perhaps such a model may become a necessity sometime in the future. At the very least, the quest to develop a new alternative model can be perceived as a purely academic undertaking for the time being until the Islamic fund industry is large and mature enough that it requires a distinctive and supposedly more accurate performance measurement model. In general however, all respondents believe that there is no urgency to develop an alternative portfolio performance model specifically for Islamic funds. The main argument is that the existing models are perceived to be adequate and suitable for evaluating Islamic funds' performance. They claimed that although religious attributes are also important factors for Islamic funds, the attributes are very subjective and difficult to measure. Instead, similar to conventional funds, return and risk are the two most critical factors that determine Islamic funds' performance, thus making the traditional portfolio performance measurement models suitable for evaluating Islamic funds' performance. The other reason is the lack of demand for the new model among fund managers themselves since the size of the Islamic fund industry is still small when compared to the size of the conventional fund industry. The current Islamic fund industry is also lacking the necessary infrastructure due to the unavailability of a *Shariah* rating agency as well as the limited *Shariah*-compliant instruments, benchmarks and *Shariah* expertise available. Therefore, a new alternative portfolio performance valuation model for Islamic funds is viewed as impractical *at the moment*.

To conclude, *Shariah* restrictions may have affected Islamic funds' performance rather adversely. The impact on performance varies among Islamic funds as it dependent upon the investment skills or competency of their fund/investment managers. However,

despite the fundamental difference between Islamic funds and conventional funds, there is no urgency to develop an alternative portfolio performance valuation model *at the moment* since industry practitioners are content with using conventional models when evaluating the performance of their Islamic funds. In addition, the need for a proper valuation model is also undermined by inadequate *Shariah* infrastructure. Based on the results of the coding analysis, the chapter now continues with the results discussion in the following section.

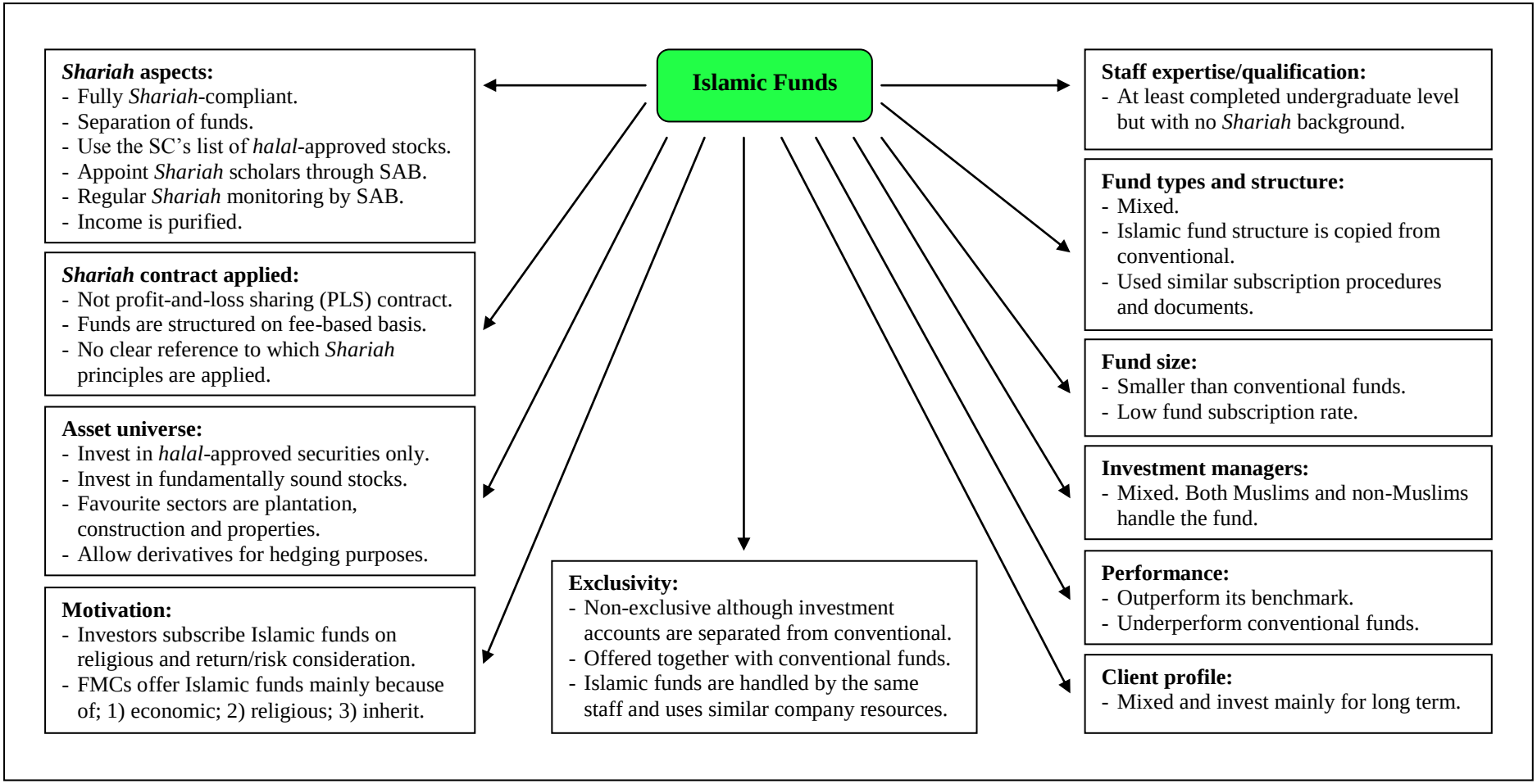
8.4.2 Discussing the Results

This section provides the results of the discussion on findings obtained from the coding analysis. The discussion is organised based on the five research questions of the interview analysis and each discussion is accompanied by a diagram derived from the data mapping process to give a broader perspective of the issue and the interaction between relevant variables concerned.

8.4.2.1 General Characteristics and Operations of the Islamic Funds

The coding analysis has established that Islamic funds are particularly characterised by their *Shariah*-compliance identities, particularly their restricted asset universe – comprised of only *halal*-approved securities – and *Shariah* monitoring. Islamic funds are also usually smaller and less subscribed when compared to their conventional counterparts. Since Islamic funds are usually offered together with conventional funds, fund management companies normally utilise similar company resources in the operation and promotion of both types of funds. The general characteristics of the existing Islamic funds are highlighted in Figure 8.2. While there is no significant issue arising with regards to the *Shariah*-compliance status as reflected by the approval from the SC, there are certain issues related to the structure and the underlying contracts of the existing Islamic funds, the *Shariah* expertise, the clients' profile, and the real intention of fund management companies in offering Islamic funds that require close attention, nonetheless.

Figure 8.2: General Characteristics of the Existing Islamic Funds



Summary:
RQ 1: What are the general characteristics and operations of the Islamic funds?
Theme 1: Islamic funds are essentially funds that adhere to *Shariah* guidelines but are not treated exclusively different from conventional funds by fund management companies. Islamic funds are particularly characterised by their *Shariah* identities but tend to be smaller in size and have lower fund subscription rate while their performance is below than that of conventional funds. Investors subscribed into Islamic funds for economic and religious reasons.

It is apparent that the structure of the existing Islamic funds is basically similar to conventional funds, thus raising a suspicion that the former is essentially a copycat of the latter but crammed with *Shariah* features. This approach is not uncommon as most of the current *Shariah*-compliant financial products are structured by mimicking their conventional counterparts. Consequently, both Islamic and conventional funds are normally thought to be largely similar with no significantly differences to one another. For instance, how *Shariah* principles are applied in the underlying contracts of an Islamic fund is not clearly defined in Islamic fund prospectus. Therefore, it is not surprising that with exception of two respondents, the other fund managers interviewed have no knowledge whatsoever of which *Shariah* transaction contracts are applied in their Islamic funds. When reading an Islamic fund prospectus or fund subscription form, one will realise that the fund prospectus and subscription form documents are indeed very similar to those of a conventional fund. In fact, there is one fund management company which is using a standard subscription form for all funds under its management. While the rationale for copying conventional documents is perhaps related to regulatory or cost considerations, it may unfortunately limit the amount of *Shariah* information that can be conveyed through the documents.

It appears that the existing Islamic funds do not differ significantly from conventional funds in terms of their operation. The relationship between unit holders as investors/subscribers of the Islamic funds with fund management companies is not defined in *Shariah* terms but simply on a fee-based arrangement basis whereby the fund management companies are paid a certain percentage of fund management fees calculated from the outstanding net asset value (NAV) of the Islamic funds' portfolio in return for their service. Likewise, the relationship between fund management companies and fund/investment managers is also usually fee-based whereby the former pay the latter a certain amount of investment management fees in return for their service. In addition, the respondents have also revealed that Islamic funds determined their dividend payout in a similar way to that in which conventional funds determined their dividend. At first, all profits (and losses) generated by the Islamic funds' investment portfolio are pooled into an investment income account. After deducting all expenses including fund management fees accrued to the fund management companies and making an allocation of retained earnings for the purpose of reinvestment, dividend rate is then determined from the remaining income available for distribution at the discretion of the fund management

companies. Hence, Islamic funds principally do not guarantee any dividend income for their investors.

In the *Shariah* context, the fee-based arrangement is termed *al-ujr* and, like in conventional funds, the fee remains payable regardless of whether the Islamic funds earned a positive return from their investment or otherwise. The majority of respondents however, were unable to relate the *Shariah* terms when explaining the relationship between investors–fund management companies–investment managers and there is strong indication that their failure to make such an explanation is due to their lack of awareness on the *Shariah* contract. This is attributed to the fact that Islamic fund managers are essentially responsible to manage and administer the Islamic funds whilst all *Shariah* matters, including *Shariah*-compliance related issues, are primarily the responsibility of the *Shariah* scholars in the *Shariah* advisory board.

The existing Islamic fund prospectuses do not explain the relationship from the *Shariah* perspective, which normally recognises the fund management activities as a business venture involving a capital provider (*rab al-maal*) and an entrepreneur (*mudarib*), for which, the *Shariah* has devised a preferred mode of cooperation namely profit-and-loss sharing (PLS) to ensure that each party in such a business venture will be fairly rewarded for their contribution and the interest of all stakeholders involved will be duly protected. Unfortunately, the popularity of the fee-based arrangement in the Islamic fund industry has seriously undermined the PLS contract. The fee-based arrangement is highly vulnerable to moral hazard problems since fund management companies and/or investment managers would continue to enjoy their fees regardless of the Islamic funds' performance. Therefore, there will be no recourse for investors/fund management companies to obtain any compensation from fund management companies/investment managers if the Islamic fund is underperforming or incurs losses since it will not be possible to identify whether the underperformance was due to external factors beyond the fund or because of incompetency on the part of the fund management companies/investment managers. Since both fund management companies and investment managers are guaranteed to receive their fees, unlike dividend which is not guaranteed to be paid to investors, there is a possibility that fund management companies and/or investment managers may not be performing at their best while continuing to receive their fees at the expense of Islamic fund investors, especially if the fund is not

generating a positive return. Instead, through the PLS contract, fund management companies and fund/investment managers are more likely to be committed when exercising their duty since their income (fee) is directly dependent upon the profit generated by the Islamic funds. However, none of the existing Islamic funds are structured based on the PLS contract, but instead, have adopted the fee-based basis similar to conventional funds. Hence, to better realise the aspiration of the Islamic teachings, fund management companies should consider structuring their Islamic funds using the PLS contract since it is the more preferred arrangement. Moreover, the popularity of the fee-based arrangement also reflects a lack of genuine innovation or creativity on the part of the fund management companies when structuring their Islamic funds.

It is rather unfortunate that most respondents have little knowledge of the *Shariah* matters despite their responsibility for Islamic funds. Although all respondents are educated to at least undergraduate academic level and have secured a fund management license, they have no formal *Shariah* education or training. In fact, most respondents assumed Islamic funds are merely funds that invest only in *halal*-approved securities and adhere to certain *Shariah* guidelines. Therefore, by taking into consideration that Islamic funds are usually designed by mimicking conventional funds, it is not surprising when most respondents perceive Islamic funds as similar with conventional funds. This perception may have prompted some respondents to put pecuniary motive higher than religious motive, with some respondents admitting they will not hesitate to advise their Islamic funds' clients to switch into conventional funds if their Islamic funds are underperforming. The desire to maximise return may have also encouraged some Islamic funds to allow investment in derivative securities albeit asserting that such investment will strictly involve *Shariah*-compliant derivative instruments and be undertaken solely for hedging purposes to protect the value of the Islamic funds' portfolio. Although the argument seems valid, investment in derivative securities will unnecessarily expose Islamic funds to speculative trading activities. Furthermore, the emphasis on performance leads fund management companies to undermine religious criteria when choosing a fund manager, or entrusting their Islamic funds to the hands of a non-Muslim fund manager. The ignorance towards the importance of the *Shariah* knowledge has resulted in the Islamic fund industry remaining in stagnancy with a lack of genuine

product development, apart from those copied from the conventional arena and an inability to promote the true Islamic teachings through the Islamic funds.

The existing Islamic fund investors are not exclusively Muslim as the funds have successfully attracted non-Muslim subscribers, as well. For Muslim investors, religious reason is obviously one of the motivating factors for them to choose Islamic funds amid other reasons, such as return and risk consideration, diversification and ethical motives. However, it is also apparent that Islamic funds are relatively small and less subscribed when compared to conventional funds, whilst the low fund switching activities imply that Islamic fund clients are basically passive, or less aggressive, investors who adopt the buy-and-hold strategy and invest for a long-term period. The low subscription rate is probably due to Islamic funds generally giving a lower return relative to conventional funds which makes the funds rather less attractive to investors in terms of monetary return.

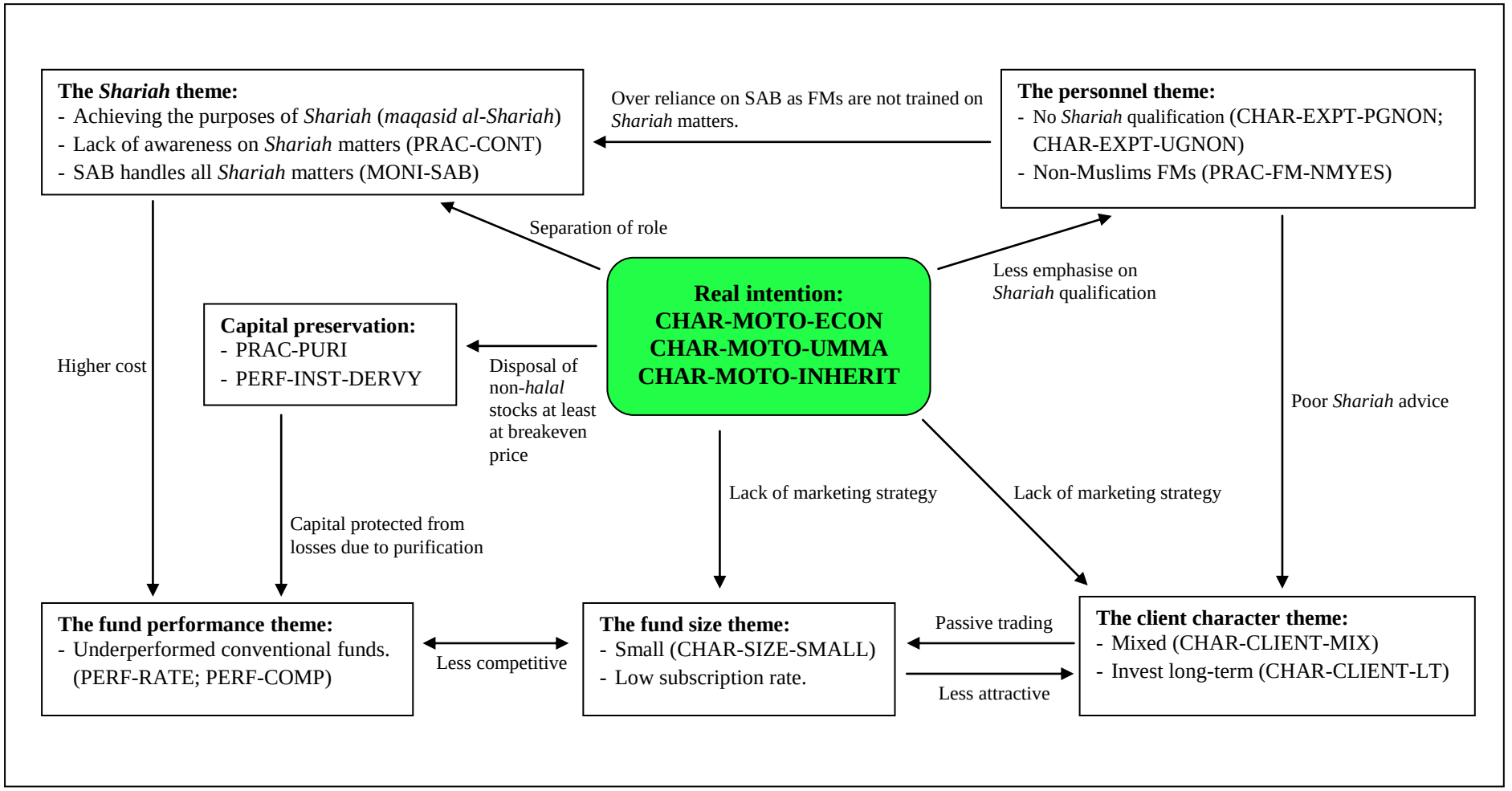
Islamic funds suffer two additional risks which put the funds at a disadvantage when compared to conventional funds. The risks are the *Shariah* non-compliance risk and higher operating costs due to the requirement to appoint *Shariah* scholars. Due to these shortcomings, it is difficult for Islamic funds to beat either conventional funds or the market index directly. In terms of operation, fund management companies do not give special treatment on their Islamic funds but instead all company resources are normally utilised for or shared by both Islamic and conventional funds. The lack of emphasis in promoting the ideals of Islamic teachings through the *Shariah*-compliant fund; the inadequate research in the development of genuine Islamic-based fund products; and, the limited *Shariah* knowledge among key personnel especially those at the top management level, fund managers and marketing personnel, has cast serious doubts on the real intention of fund management companies in offering Islamic funds. While the motivation of offering Islamic funds can be as noble as to benefit the *umma* (Muslim society) as some respondents have claimed, it can also significantly be driven by economic motives such as to broaden the fund management companies' earnings base or to create a competitive advantage against their rival companies. The following topic analyses the real intention of the fund management companies in offering Islamic funds.

8.4.2.2 Real Intention of Fund Management Companies in Offering Islamic Funds

This section discusses the real intention of fund management companies in offering Islamic funds. The coding analysis reveals that most respondents believed economic motive was the main factor behind their fund management companies' decision to offer Islamic funds but religious causes were nonetheless also cited by some of the respondents. Hence, it is important to investigate the issue further by examining how the real intention is reflected through the current operations of the existing Islamic funds. In this section, the scope of discussion of the fund management companies' real intention is broadened to include several other themes namely the *Shariah* issue, the personnel, the size and performance of the Islamic funds as well as the client characteristics as shown in Figure 8.3. It is to be noted that the arrow lines do not necessarily imply causality effect among the variables concerned.

For the *Shariah* theme, focus is given on how fund management companies understand and appreciate the *Shariah* objectives in the handling of their Islamic funds. For the purpose of this study, the *Shariah* understanding, hence the religious motive is defined based on how the respondents perceive their Islamic funds contribute to the success of attaining the objectives of *Shariah* (*maqasid al-Shariah*). The assumption is that if the offer of Islamic funds by fund management companies is largely motivated by religious causes, this should be reflected through their commitment to achieve the purposes of the *Shariah*, hence the ideal of Islamic teachings, through a wider application of the *Shariah* principles in the construct and handling of their Islamic funds as well as enhancing the level of the *Shariah* understanding amongst their staff, especially in investment and marketing functions so proper advice can be given to their Islamic fund clients. Hence, if the respondents are at least aware of the *Shariah* objectives, their response to questions pertaining to the original intention of their fund management companies in offering Islamic funds should be able to explain the manner in which their Islamic funds will help in attaining the purposes of the *Shariah*, particularly the fulfilment of the necessities level. Strictly speaking, their Islamic funds should be designed in a way that will help Muslims to preserve or enhance their faith, wealth, mind and honour when investing in those funds.

Figure 8.3: Real Intention of the Fund Management Companies in Offering Islamic Funds and Its Implications



Summary:
RQ 2: What is the real intention of the fund management companies in offering Islamic funds?
Theme 2: Economic reason is the main factor that motivates the fund management companies to offer Islamic funds although religious motive is also important.

Unfortunately however, none of the respondents were able to explain how their Islamic funds would contribute in achieving the *Shariah* objectives apart from saying that their funds benefits the Muslim society (*umma*) by providing them the opportunity to invest without forsaking their religious belief. Although this argument is valid and in one way or another conforms to the *Shariah* purposes, it is obviously a generalised comment and reflects that the respondents have a rather vague understanding towards the *Shariah* role in the construct of their Islamic funds. Further examination of their Islamic funds' prospectus also reveals that their prospectus does not make any explicit reference to religious or *Shariah* motive as the driving factor behind their Islamic fund offering, or explaining how the funds will benefit the Muslim society or promote Islamic teachings. Instead, what is obvious is that their Islamic fund prospectus closely resembles their conventional fund prospectus, differentiated only through additional information pertaining to the *Shariah* restrictions on the funds' investment universe, the *Shariah* risk and the *Shariah* advisory board. Except for one respondent whose fund management company is a subsidiary of an Islamic banking group, the other respondents had no knowledge whatsoever of the types of the *Shariah* contracts applied in their Islamic funds. Only one company clearly identified the *Shariah* principles governing their unit trust transactions and the tripartite relationship between investors–the fund management company–investment managers. However, as explained in the previous section, the existing Islamic funds have been structured mainly on a fee-based (*al-ujr*) basis, similar to conventional funds, instead of the PLS basis although the latter is the more preferred mode of venture by the *Shariah*.

For the personnel theme, the apparent lack of key personnel with *Shariah* knowledge and qualifications has prompted fund management companies to engage *Shariah* scholars through a *Shariah* advisory board (SAB). Typically, these *Shariah* scholars only specialise in *Shariah* matters and have little or no knowledge on investment operation. This results in a separation of roles between the *Shariah* scholars and the fund managers, with the former merely advising on *Shariah* matters whilst the latter are responsible for investment matters of the Islamic funds. Although it was claimed that there has not yet been a conflict between the *Shariah* advisory board and the fund management companies, the separation of roles has nevertheless reduced the function of the *Shariah* advisory board to become merely a reference or endorsing authority, rather than an active involvement in the day-to-day operation of the fund management

companies, including personnel and financial product development. The separation of roles also creates a situation where the fund management companies become overly reliant on the *Shariah* advisory board for advice on *Shariah* matters. This reduces the incentive for fund management companies to develop a pool of their own *Shariah* experts, or to provide *Shariah* training for their key personnel, especially fund managers, or to place emphasis on *Shariah* qualifications when hiring or appointing a fund manager. One respondent has even admitted that religious belief or *Shariah* knowledge is not an important factor to be considered when hiring a fund manager, even if the fund involved is an Islamic fund. This explains why none of the fund managers have substantial *Shariah* knowledge and why non-Muslim fund managers are entrusted to manage Islamic funds. A dire consequence resulting from the lack of attention towards the *Shariah* is a fund manager becoming unable to give proper advice on Islamic fund to their clients or to help promote the true Islamic teachings or attaining the purposes of *Shariah* (*maqasid al-Shariah*). This is demonstrated by one respondent's admission that he will not hesitate to advise his Islamic fund clients to switch their investment from Islamic funds to conventional funds if the return from the Islamic funds is expected to be lower than the conventional funds. While this advice may be sensible from investment strategy point of view, simply advising Islamic fund investors to switch funds in pursuit of monetary gains reflects ignorance towards the real intention of investing in Islamic funds from the *maqasid al-Shariah* point of view.

With regards to fund size, the existing Islamic funds are relatively smaller and less subscribed than conventional funds though interest towards the funds remains strong, nonetheless. Performance wise, published statistics indicate that Islamic funds have generally underperformed conventional funds if the two types of fund are compared directly, despite that Islamic funds may outperform their own benchmarks. One plausible reason is because Islamic funds inevitably suffer from higher operating cost. Even if an Islamic fund is able to match its conventional counterpart in terms of asset composition and fund managers' investment skills, it is still in a disadvantaged position due to the additional *Shariah* risk and expenses which result in a higher operating cost for the fund. The relatively poor performance makes Islamic funds less competitive or less attractive when compared to conventional funds which, in turn, contribute to the lower subscription rate in Islamic funds.

One interesting issue related to Islamic funds' performance is the tendency of fund management companies to protect the capital or portfolio value of their Islamic funds. Most fund management companies allow their Islamic funds to invest in derivative securities despite that such instruments are mired by controversial issues pertaining to their *halal* status and speculative nature. Although fund management companies claim that such investment will be undertaken strictly for hedging purposes and with due care to ensure *Shariah*-compliance, investment in derivative securities will unnecessarily exposes Islamic funds' portfolio to excessive risk and speculative activities which, in turn, may contradict the *Shariah* purposes that underline the Islamic funds' creation. The desire to protect portfolio value or return of Islamic funds is also evident from income purification practice. Not all respondents are actually aware about the income purification exercise or its significance. In fact, fund management companies do not purify income generated from investment made in listed companies on the assumption that the purification is not necessary since the stocks have already been approved as *halal*. The current practice also allows fund management companies to delay the disposal of a stock that has turned non-*halal* until the market price of the stock reach the breakeven level where the fund management companies are able to recover all transaction costs incurred at the time when the stock was acquired originally. This effectively means that the fund management companies may continue to keep the non-*halal* stock until a favourable price is reached for its disposal but no dividend income can be received from the stock during the period. Although this practice is acceptable, it risks Islamic funds receiving dividend income from a non-*halal* stock, especially if the price of the non-*halal* stock takes longer to recover. It is interesting to note that some fund management companies have even thought of retaining the purified income by transferring the amount into their conventional funds' pooled income account rather than channelling it to charities. The tendency to invest in derivative securities and preserve capital indicates that the fund management companies are putting the pecuniary motive above the religious motive.

For the client theme, the small fund size and low subscription rate suggest that Islamic fund investors are generally passive and invest for a long-term period. This assumption is supported by the low fund switching activities between different Islamic funds offered by the same fund management company, implying that investors mainly adopt the buy-and-hold strategy when investing in Islamic funds. The low subscription rate and the passive trading indicate that perhaps Islamic funds are less attractive to

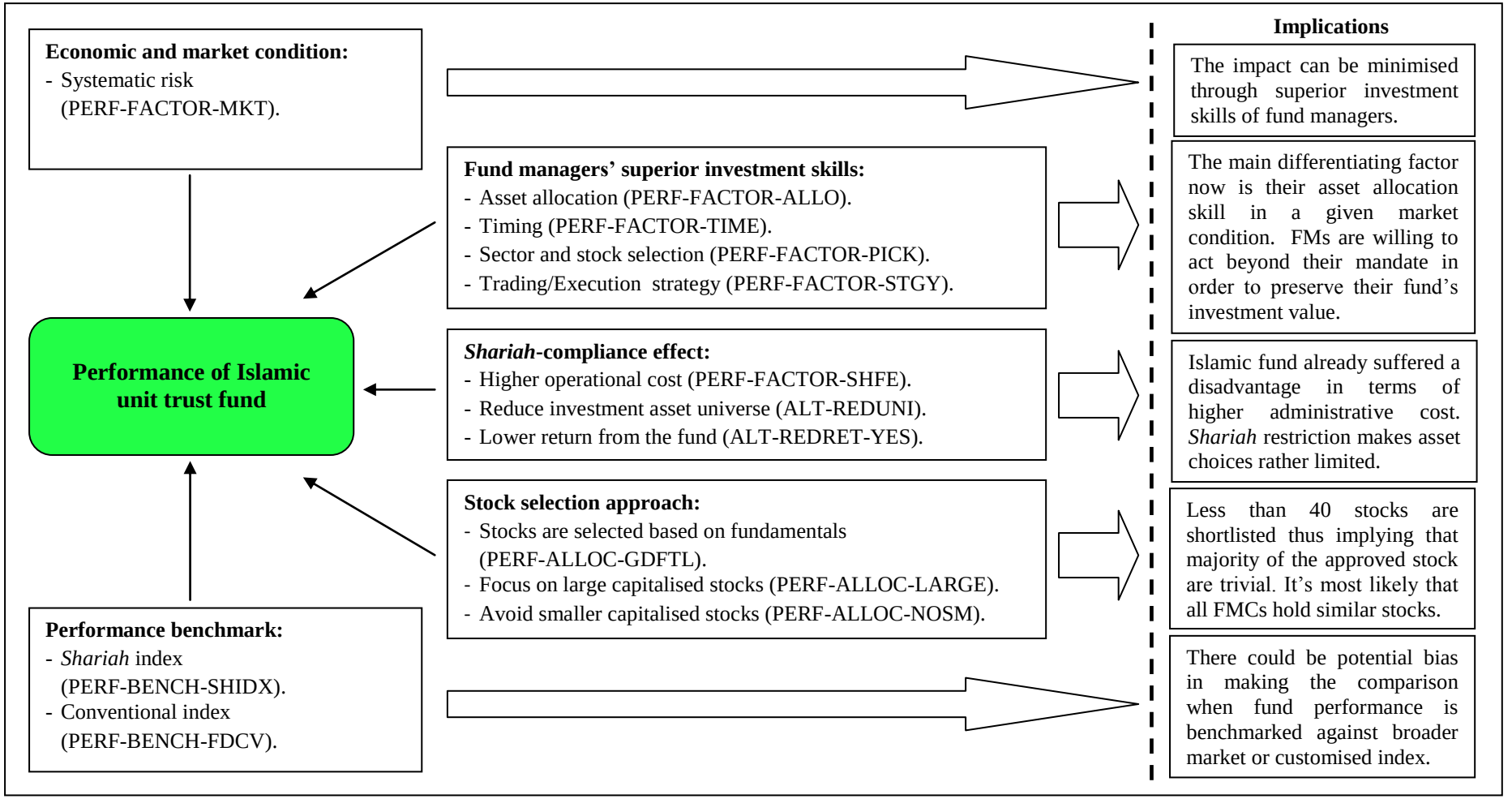
investors and this is further aggravated by the funds' relatively lower performance. Another contributing factor is the lack of promotion since marketing activities carried out by unit trust agents or employees of fund management companies normally involves the entire bundle of financial products offered by the companies and are not specifically focussed on Islamic funds.

To conclude, it can be argued that the real intention of fund management companies in offering Islamic funds is driven primarily by economic motives rather than religious causes. This is apparent from the current operation of the fund management companies which seems to put less emphasis on promoting the true Islamic teachings through their Islamic funds. Instead, Islamic funds are generally perceived as just another product line by the fund management companies, with the main purposes of generating additional income, enhancing their market share and improving their competitive position. The apparent lack of *Shariah* knowledge among key personnel coupled with the lack of serious efforts to develop the *Shariah* infrastructure implies that the existing Islamic funds' operation has been focussed upon the stock screening process to ensure that the funds only invest in *halal*-approved securities. Even then, most of the fund management companies simply relied on the SC's list of *halal* stocks for their equity investment. Hence, the understanding of Islamic funds should be expanded into the philosophy underlying the funds' creation and the contract governing all stakeholders affected by the funds. In fact, some Muslim fund managers have voiced their concern and discomfort, especially with regards to non-Muslim fund managers' handling of Islamic funds and the real intention of non-Muslim dominated fund management companies' offering of Islamic funds. Apart from their *Shariah* attachment, the appeal of Islamic funds is also determined by their profit performance as in the case of other financial products.

8.4.2.3 Factors Affecting the Islamic Funds' Performance

This section discusses the factors influencing Islamic fund performance. The coding analysis reveals that the factors can be categorised into four focussed coding groups namely the fund managers' special investment skills, the general market condition, the stock selection approach of the fund managers, and the impact of *Shariah*-compliance. The factors and their implications are depicted in Figure 8.4.

Figure 8.4: Factors Affecting the Islamic Funds' Performance



Summary:
RQ 3: What are the factors that contribute to the Islamic funds' performance?
Theme 3: Islamic funds' performance is significantly influenced by fund managers' special investment skills, general market condition, stock selection approach of the fund managers, and consequences of *Shariah*-compliance. Arguably, the most crucial is fund managers' special investment skills as it enables the fund managers to outperform in any given market condition. The *Shariah*-compliance effect however, has a rather adverse impact on the Islamic funds' performance.

The main contributing factor to the performance of any mutual fund is arguably its fund managers' superior investment skills. The four crucial skills are the asset allocation, timing, industry and stock selection, as well as trading/execution strategy. The asset allocation skill refers to the ability of fund managers to accurately decide the proportion of each type of asset in their portfolio or to make the appropriate changes to their portfolio's asset composition in response to the changing market environment. Specifically, this refers to the ability of fund managers to anticipate possible changes in the future market direction and react effectively by determining the right mix of assets in the portfolio between fixed income securities, equities, cash and money market instruments that will best suit the new market condition. Further review of the fund prospectuses however, shows that there is a huge variation in the percentage of each asset allowed for investment. For example, consider a two-asset portfolio involving equities and fixed income securities. The portfolio mix usually allows fund managers to invest between a minimum of 20 per cent to a maximum of 80 per cent in each asset class depending on market condition. Therefore, if the stock market is expected to be bullish initially, the fund managers may choose to invest a maximum of 80 per cent of the fund in equities and 20 per cent in fixed income securities (80:20), and later change the asset composition to 20:80 if the stock market is poised to be bearish, or 50:50 if the outlook of the two asset classes is similar. Since fund managers are given full authority to alter the asset mix at their discretion, the huge variation in the maximum and minimum allowable percentage of investment for each asset classes in any given market environment would reflect whether the fund managers possess superior asset allocation skill or otherwise. It is worth mentioning here that some Islamic fund prospectuses have even put in a clause allowing their fund managers to act beyond their portfolio mandate in order to preserve the fund's portfolio value as can be interpreted from the following excerpts:

> In adverse market conditions, the Funds may hold significantly higher amount of liquid and defensive assets (including fixed income securities with different maturity dates) **than that prescribed by their respective mandates** as a temporary positions. (emphasis is researcher's)

A clause such as above explicitly authorises fund managers to breach their portfolio mandate which requires that investment in a specific asset class be made within a certain proportion in accordance with the pre-determined portfolio objectives. Although the clause may have a *bona fide* intention to protect the portfolio value, the implication is that

it exposes the Islamic fund to asset allocation risk caused by fund managers violating their portfolio mandate without consulting their investors. Again, if the clause is meant to represent an unconditional trust by investors that fund managers will do their best in managing the fund, there is no way to determine that the fund managers really act at the best interest of the investors, especially considering that the fund managers have been guaranteed their fees regardless of the funds' performance. Hence, the clause may result in fund managers dishonouring the concept of trust that underlies the very foundation of the contract. This also makes the assessment of unit trust or mutual fund performance more difficult if analysis is made using the existing funds available in the market. Possessing the timing, stock and industry selection as well as trading/execution strategy skills means the fund managers are able to determine the best timing to buy or sell securities, identify underpriced securities or profitable industries, and minimise transaction costs. Therefore, a fund manager who possesses these skills is likely to outperform a rival fund manager who is lacking these skills. In one case, a respondent claimed that her Islamic fund had managed to recover and performed significantly better in 2008–2009 period after she decided to appoint a new fund manager to replace the previous underperforming fund manager. This case provides a real example of the importance of fund managers' investment skills in determining Islamic funds' performance.

Economic and market condition is undoubtedly a crucial factor which may affect Islamic funds' performance. It's a systematic risk which cannot be avoided by fund managers since it affects all financial instruments available and all business entities operating in the same market. The risk include changes in business and economic cycles, inflation, political stability, changes in regulatory environment, worldwide recession or financial crisis, or shift in consumer taste. While the risk is unavoidable, the impact however, can be minimised through fund managers' superior investment skill by accurately anticipating the possible changes in the market direction and reacting to the changes accordingly.

One factor which certainly influences Islamic funds' performance unfavourably is the *Shariah*-compliance effects. Although strict adherence to *Shariah* requirements is essential for Islamic funds, *Shariah* restrictions on stock selection have resulted in a reduced investment asset universe for Islamic funds. In general, Islamic funds are

prohibited from investing in companies or financial instruments that are involved in conventional banking and insurance, interest rate-based transactions and production of goods or services deemed *haram* by the *Shariah* either directly or indirectly. Consequently, Islamic funds are prevented from investing in companies involved in conventional banking and finance, gaming, liquor, and most conglomerate companies with diversified business interests. These are the sectors which are usually represented by large-capitalised stocks with attractive dividend payout, strong earnings potential and less volatile trading. Instead, Islamic funds' portfolio is heavily invested in defensive industry such as plantation, food, utilities and properties companies. To illustrate the consequence of the *Shariah* restrictions on stock selection, consider two identical portfolios that have the same mandates, structure and are managed by the same fund manager (therefore, the effect from portfolio structure and the fund manager's investment skills is controlled) but one is Islamic-based and the other is conventional. Obviously, the conventional portfolio will have the advantage since it is able to invest in all profitable stocks whether *halal* or non-*halal* whilst the Islamic portfolio is restricted to investment in non-*halal* stocks regardless of how profitable the companies are. This drawback significantly reduces the chances for Islamic funds to outperform their conventional counterparts.

Although some respondents argued that *Shariah* restrictions may not significantly reduce the asset universe of Islamic funds, as fund managers can always capitalise on the large numbers of *halal*-approved stocks available to create a combination of stocks that will give similar return and risk exposure with investment in a non-*halal* stock, the strategy is neither as simple as it was claimed nor is it easy to find and create a combination of *halal*-approved stocks that could exactly match the return and risk as well as trading volatility of a non-*halal* stock. Certainly, such a strategy requires exceptional investment and trading skills on the part of the fund managers. In addition, although there are a large number of halal-approved stocks, the Islamic fund industry is still lacking other types of financial products including money market instruments, commercial papers and fixed incomes securities. This may explain why Islamic funds' performance is inferior to conventional funds as indicated by the published statistics.

The coding analysis has identified the stock selection approach of fund managers as another factor influencing Islamic funds' performance. Fund managers usually prefer stocks with sound fundamentals as these stocks are perceived to be strong both

operationally and financially, and they offer a sustainable dividend income to their funds. Since the selection approach emphasises good fundamentals, the shortlisted stocks normally comprise of large-capitalised companies as they are usually the market leader in their industry and pay relatively higher dividend payout rates. Such characteristics make fundamentally sound stocks attractive to institutional investors who normally purchase these stocks on a long-term basis resulting in a more stable and less volatile trading. Large-capitalised stocks with strong fundamentals could also provide considerable protection against a bearish market or excessive volatility in the stock market since their prices are more likely to fluctuate in a relatively narrow range and would recover at a faster rate in the event the stock market rebounds. These stocks are also the major beneficiary of good economic condition or a bullish stock market. In addition, large-capitalised stocks are monitored by investment research houses closely, thus giving these stocks the information advantage and making them more visible, particularly to institutional investors including Islamic fund managers. Therefore, concentrating on fundamentally sound, large-capitalised stocks would help to ensure that the value of Islamic funds' investment portfolio would remain sustainable. Consequently, Islamic fund managers will tend to avoid smaller-capitalised stocks as these stocks are perceived to be more risky due to their relatively low and less sustainable dividend payout, volatile trading with huge price fluctuation, and greater information asymmetry since they are less monitored by investment research houses.

However, the selection approach which favours mostly large-capitalised stocks may also have its own negative implication. Response from the participating fund managers indicates that less than 40 stocks are normally being shortlisted as compared to 855 *halal*-approved stocks available in the SC's list. This represents less than 5 per cent of the total *halal* stocks that make their way into Islamic funds' portfolios, thus signifying that the majority of the *halal* stocks are unfortunately trivial, investment-wise. More importantly, this also implies that all Islamic funds with the same objectives or portfolio mandate are likely to have similar stocks in their portfolio which, *ceteris paribus*, may result in their performance not to be substantially different comparatively. Therefore, any significant difference in the performance of a given type of Islamic funds is likely to reflect their fund managers' investment skills or the type of performance benchmark used.

In terms of performance, respondents have argued that it is rather misleading to make a direct comparison between the performances of Islamic funds against conventional funds since both constitute different classes of unit trust funds. Since conventional funds have practically no limits on the types of asset they can invest in, unlike Islamic funds which at the onset are already restricted by the *Shariah*, comparing the performance of the two funds is poised to produce biased results against Islamic funds as they are likely to be easily outperformed by conventional funds. In view of this, the current industry practice is to compare Islamic funds' performance against *Shariah*-compliant benchmarks such as the KL *Shariah* Index (now withdrawn), the FBM Emas *Shariah* Index, the FBM *Hijrah Shariah* Index, or a customised index comprising of a mixture of *Shariah*-compliant securities developed internally by fund management companies. Therefore, extra caution should be exercised when interpreting a report claiming Islamic funds' outperformance or underperformance since comparison may be made against the Islamic funds' own designated benchmark and not against common benchmarks or market index.

Although it seems logical to compare Islamic funds' performance against *Shariah* indices on the grounds that both involve *Shariah*-compliant instruments, there is a potential shortcoming in using *Shariah* indices as performance benchmark. *Shariah* indices such as the FBM Emas *Shariah* Index basically comprise of all listed *halal*-approved equities, the majority of which are medium and small-capitalised stocks. On the contrary, Islamic funds' portfolios are mainly comprised of large-capitalised stocks as these are the preferred stocks of Islamic fund managers owing to their superior earnings, stable price fluctuation and high trading liquidity. In view of the huge differences in stock components, there is a potential mismatch when *Shariah* indices are used as a performance benchmark for Islamic funds since the indices comprise mostly of medium and small-capitalised stocks whilst the funds are heavily weighted towards large-capitalised stocks. Considering that trading in large-capitalised stocks is more stable and less volatile as compared to small-capitalised stocks, there is high likelihood that Islamic funds will outperform the *Shariah* index. Hence, the appropriate benchmark for comparing Islamic funds' performance is a *Shariah* index which is represented by large-capitalised, *Shariah*-compliant stocks similar to the KLCI.

In practice however, some fund management companies are using conventional instruments such as conventional fixed deposit rates as a benchmark against their Islamic funds. The fund managers concerned justify the practice by saying that the adoption of the conventional fixed deposit rates does not contradict the *Shariah* or render their Islamic funds non-*Shariah*-compliant since the instruments merely serve as a benchmark and do not constitute part of their Islamic funds' investment. This line of argument however, is arguably unconvincing and it highlights inconsistency on the part of Islamic fund managers concerned when it comes to performance measurement. It appears that the Islamic fund managers have purposely been selective in their approach when choosing the benchmark to be used to compare their Islamic funds' performance. This inconsistency may be driven by the motive to show that their Islamic funds could outperform conventional instruments. Arguably, if the use of conventional instruments is purely for benchmarking purposes as claimed, then it raises a question why such a practice is not widely applied on all Islamic funds and other *Shariah*-compliant instruments. Instead, Islamic fund managers generally prefer to compare their Islamic funds' performance against *Shariah*-compliant instruments or indices and on only a few occasions are conventional instruments or index used, thus reflecting a possible adverse selection strategy of choosing only underperforming conventional instruments or indices as benchmarks for evaluating their Islamic funds.

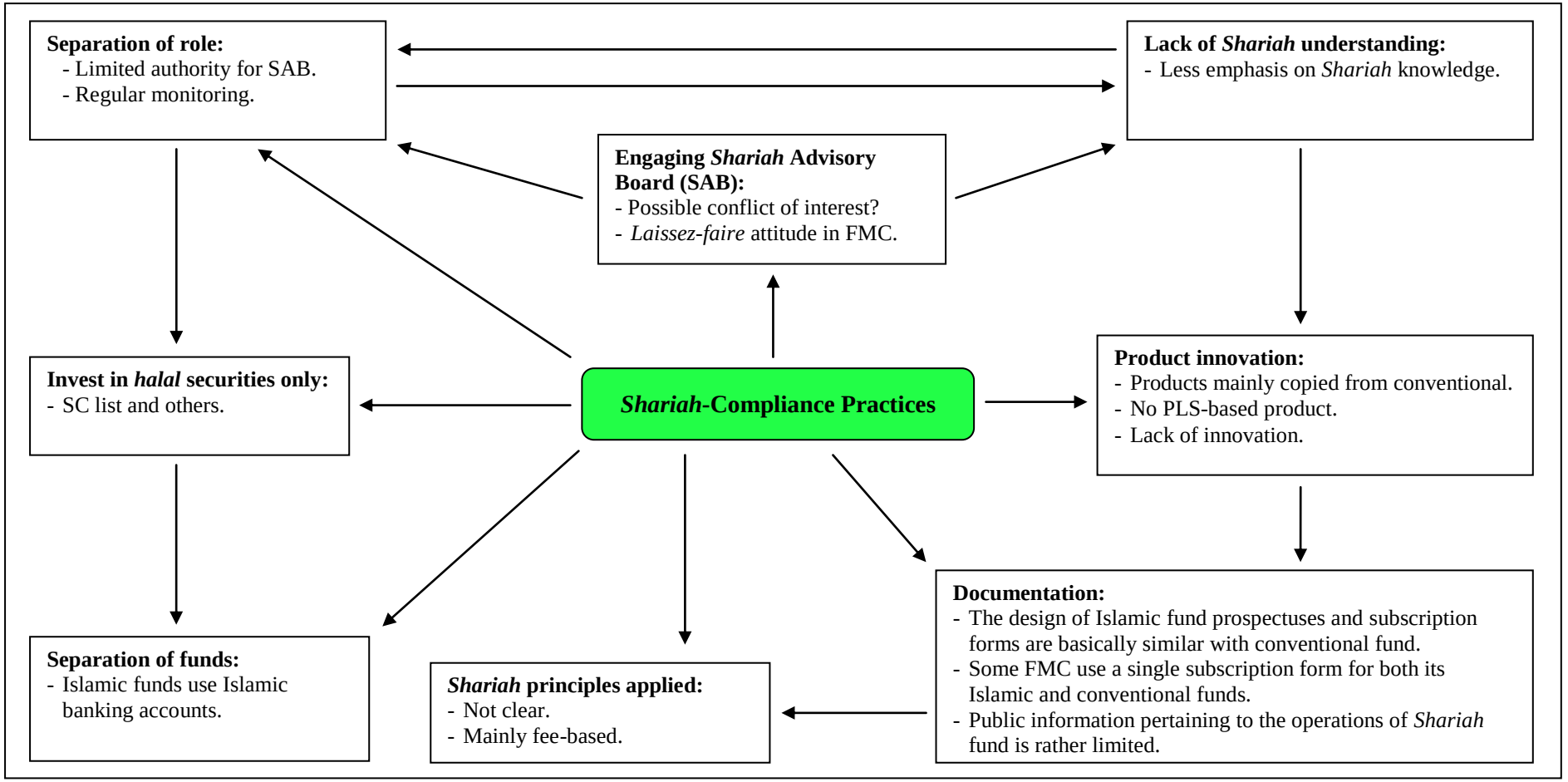
To conclude, four factors have been identified as influencing Islamic fund performance namely the fund managers' special investment skills, the general market condition, the stock selection approach of the fund managers, and the *Shariah*-compliance effects. Further analysis reveals that extra caution should be exercised when interpreting Islamic funds' performance since in most cases the performance is measured against other *Shariah*-compliant benchmarks and does not represent a direct comparison with the performance of conventional funds or benchmarks. While the first three factors may have contributed to Islamic funds' performance positively, the *Shariah*-compliance factor unfortunately, is affecting Islamic funds' return adversely since the adherence to the *Shariah* requirements resulted in restricted investment choices. In fact, the respondents have neither mentioned that *Shariah*-compliance factor brings positive results nor that *Shariah* expertise contributes significantly to their Islamic funds' performance. The following section analyses the current *Shariah* practices of fund management companies.

8.4.2.4 The Current Nature of *Shariah*-Compliance Practices by Fund Management Companies

This section discusses the current nature of *Shariah*-compliance practice by fund management companies. The coding analysis has examined the *Shariah*-compliance practice in terms of stock selection, appointment of *Shariah* advisory board (SAB), *Shariah* monitoring as well as separation of investment and trading accounts between Islamic and conventional funds. Aided by Figure 8.5, this section analyses the issue further from three perspectives namely the handling of Islamic funds, the *Shariah* advisory and monitoring practice and the Islamic fund products.

The coding analysis has revealed that the existing fund management companies are using the list of *halal*-approved stocks issued by the SC. Although the SC's list provides the industry with a standardised directory of *halal*-approved stocks, thus avoiding any possible confusion resulting from multiple and contradictory listing if each of the fund management companies is compelled to produce their own list of *halal*-approved stocks, the dependency on the SC's list represents a rather convenient option since the burden to determine the *halal* status of a listed company no longer rests with the individual fund management companies. Consequently, the implication is that all fund management companies will end up having the same list of potential stocks to choose from and they will have little incentive either to seriously develop their own internal *Shariah* expertise or to grant their appointed *Shariah* scholars a greater role, such as to be involved actively in their investment operations or product development, apart from merely providing *Shariah*-related advisory services. As long as the current practice continues, the separation of role between the *Shariah* advisory board and the fund management companies is likely to prevail, thus limiting the prospect of genuine development in the Islamic fund industry.

Figure 8.5: The Nature of the Current *Shariah*-Compliance Practices



Summary:
RQ 4: What is the current nature of the *Shariah*-compliance practice by the fund management companies?
Theme 4: All existing Islamic funds have been certified *Shariah*-compliant by the SC. The current practice reveals a separation of roles between *Shariah* advisory boards (SAB) and investment committee of fund management companies. The boards have a rather limited responsibility and involvement but deemed adequate with regards to ensuring the existing Islamic funds remain *Shariah*-compliant. The concern towards higher cost and lack of investment and development in *Shariah* practice indicates that fund management companies are merely fulfilling the minimum regulatory requirement for *Shariah*-compliance.

With regards to dual funds offerings, all transactions are principally maintained in two separate set of accounts to ensure that financial proceeds from the Islamic funds are not mixed with proceeds from the conventional funds. The rationale is to safeguard the purity of Islamic funds by preventing the funds from receiving any non-*halal* interest from its banking accounts. Therefore, all financial transaction involving Islamic funds will be channelled through Islamic bank accounts. However, this separation only applies to financial accounts and does not affect other fund management companies' resources such as manpower, support services and back-office operations. For instance, a fund manager may be assigned to undertake investment tasks for both Islamic and conventional funds whilst a marketing officer or unit trust agent will be doing the promotion for both types of funds. The same treatment is also applied on other fund management companies' resources such as office premises, equipment and other support services. One plausible reason for the sharing of manpower and facilities is the common usage by both Islamic and conventional funds which makes it economical for fund management companies to simply share the resources. Therefore, it is apparent that Islamic funds are not treated exceptionally different from conventional funds whenever fund management companies' resources are concerned.

A current practice that has raised considerable concern among Muslim fund managers is the appointment of non-Muslim fund managers to manage Islamic funds. One common reason given is the insufficient number of licensed Muslim fund managers in the country, thus forcing fund management companies to assign their Islamic funds to non-Muslim fund managers. Although religious belief is not yet considered an important criterion when selecting a fund manager, entrusting Islamic funds to non-Muslim fund managers who have very little or no knowledge whatsoever about Islamic teachings and *Shariah* objectives might not augur well for the long-term development of the Islamic fund industry. This is because their apparent lack of understanding may prevent them from appreciating the philosophy underlying the Islamic funds' creation within the context of promoting the *Shariah* objectives. Instead, for non-Muslim fund managers, Islamic funds are perceived as just another product that their fund management companies are selling to the general public. Therefore, it can be argued that non-Muslim fund managers would neither be able to help in achieving the *Shariah* objectives nor they can be expected to appreciate the real aspiration of Islamic funds beyond the mere pursuit of monetary gains. Furthermore, exclusively assigning Islamic funds to Muslim fund

managers will help enhance investors' confidence towards the purity of the Islamic funds' operation. One respondent has admitted that there is a growing concern amongst his Islamic fund clients towards this issue whereby the clients have requested his fund management company assign only Muslim fund managers to handle its Islamic funds which has resulted in a restructuring of their fund managers.

With regards to the *Shariah* practice, the existing norm is that all fund management companies appoint *Shariah* scholars who will advise them on *Shariah*-related matters through a *Shariah* advisory board (SAB). Three of the respondents set up their own internal *Shariah* board whilst four other respondents outsourced their *Shariah* experts from a third party. While there is no significant issue arising with respect to internal SAB, there are potentially unfavourable consequences involving external SAB, instead. For instance, all four fund management companies are appointing similar *Shariah* scholars employed by the same institution specialising in providing *Shariah* advisory services. Since the four different fund management companies are sharing the same *Shariah* scholars, there is always a risk – regardless of how remote the possibility is – that the individual fund management company's trade secrets or confidentialities may be compromised. Hence, when faced with such a risk, fund management companies may become extra vigilant for fears that their secrets or strategy may be compromised. The sharing of *Shariah* scholars will also result in rather slow progress in the development of the Islamic fund management industry since it would deepen the separation of roles between the SAB and the fund management companies. Consequently, the former may eventually end up functioning more as an endorsing entity rather than being actively involved in the operations and development of genuine Islamic-based funds. This perception is based on the admission by a respondent that he has never encountered any difficulty with regards to *Shariah*-related matters as he had always been able to obtain the necessary approval from the SAB appointed by his fund management company.

On issues pertaining to Islamic fund products, the respondents have generally admitted that the existing Islamic funds are basically structured by mimicking conventional funds. This is evident from the design of the Islamic funds' prospectuses and subscription forms which have a stark resemblance to their conventional counterparts but with an additional section to incorporate *Shariah*-related information. It is also not

surprising that the existing Islamic funds have been structured on a fee-based scheme in which fund management companies are practically assured to earn their income in the form of a fund management fee chargeable at a certain percentage rate of the funds' NAV. Since the fee-based scheme is common in conventional funds, its vast adoption by Islamic funds has undermined the profit-and-loss sharing (PLS) scheme which is preferred by the *Shariah*. Unlike the fee-based scheme which is vulnerable to moral hazard problems, the PLS scheme will supposedly encourage Islamic fund managers to make their best efforts since their income is no longer guaranteed, but instead, is subject to the actual performance of their Islamic funds. In addition, with exception of one respondent who was able to outline the relevant *Shariah* contracts applied in his Islamic funds' transactions, the other respondents apparently have no clear understanding of the *Shariah* contracts and no explanation about the types of *Shariah* contracts used is given in their Islamic funds' prospectus. Therefore, it can be inferred from the mimicking of the conventional funds that the current Islamic fund industry is still lacking of product innovation to give the industry a more genuine Islamic-based products.

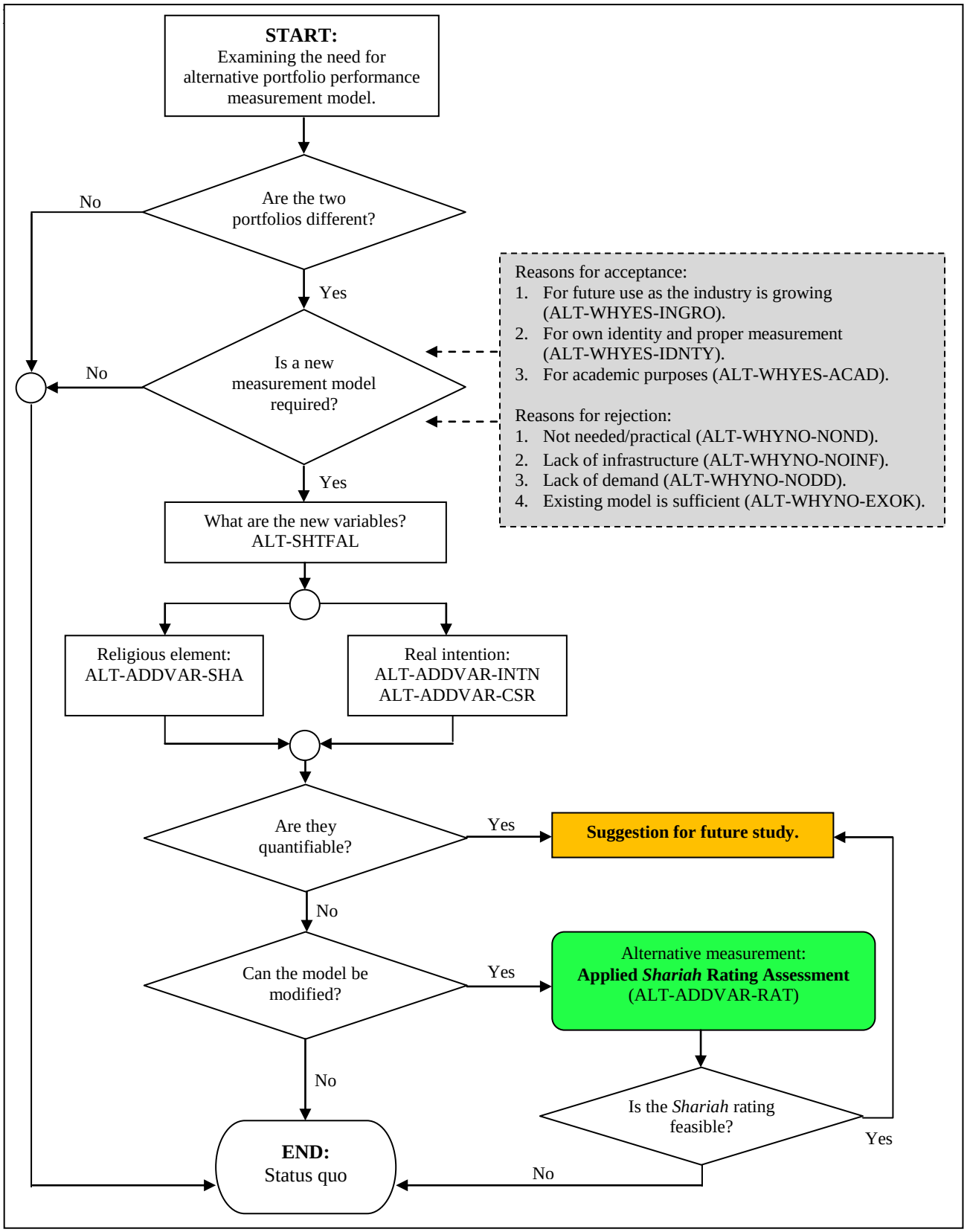
To conclude, while the *Shariah*-compliance status of the existing Islamic funds is undoubted, there is an apparent lack of knowledge and understanding towards the *Shariah* principles and objectives amongst the industry practitioners. This observation is based on the current practice of the fund management companies which has so far being heavily focussed on stock screening rather than developing genuine Islamic fund products or expanding the *Shariah* knowledge and expertise within their companies. Even then, most companies have conveniently relied upon the SC's list of *halal*-approved stocks. The current practice unfortunately, may have contributed significantly to the stagnancy in the Islamic fund industry. Instead, the objectives and scope of Islamic funds should be expanded to incorporate *Shariah* principles and objectives governing all the Islamic funds' stakeholders through the attainment of the *Shariah* purposes (*maqasid al-Shariah*), profit-and-loss sharing (PLS) and corporate social responsibility (CSR). Therefore, based on the large discrepancies between the fund management companies' commitment in expanding the *Shariah* knowledge and expertise as well as developing genuine Islamic fund products against their profit or economic pursuits in their offering of Islamic funds, it can be deduced that the current approach of the fund management companies is primarily to fulfil the minimum regulatory requirements that enable their Islamic funds to obtain or retain the *Shariah*-compliant status. The main reason for the limited investment

in *Shariah* development is because it involves higher costs, which, the fund management companies fear would affect their Islamic funds' performance adversely. The following section discusses the portfolio performance valuation model for Islamic funds.

8.4.2.5 The Necessity of Developing a New Alternative Portfolio Performance Measurement Model Specifically for Islamic Funds

This section focuses on issues related to the valuation of Islamic funds' performance and the need to develop an alternative portfolio performance measurement model exclusively for Islamic funds. The coding analysis revealed that the *Shariah* restrictions may have affected Islamic funds' performance unfavourably but the impact varied among the Islamic funds depending on the investment capability or skills of their fund managers. The analysis also indicates that an alternative valuation model may not be necessary *at present* since industry practitioners seem content with using the traditional portfolio performance models when evaluating their Islamic funds, whilst the current inadequate *Shariah* infrastructures are likely to hinder any effort to develop such an alternative valuation model. This section analyses the issue further while looking into other options available for improving the method of assessing Islamic funds. The entire discussion is illustrated through a flowchart in Figure 8.6.

Figure 8.6: Flowchart of the Feasibility of Developing an Alternative Portfolio Valuation



Summary:
RQ 5: Is it necessary to develop an alternative portfolio performance measurement model specific for Islamic funds? Theme 5: *Shariah* restrictions have affected Islamic fund performance rather unfavourably. However, feedbacks from practitioners imply that a new alternative portfolio measurement model is considered not necessary at the moment. Instead, there is a need to assess the extent to which *Shariah* principles are being implemented by FMCs.

Although the respondents have generally agreed that the *Shariah* restrictions render Islamic funds to be essentially different from conventional funds - or if using a respondent's own analogy, it's like comparing an apple with an orange, so to speak - which causes a direct comparison of their performance rather inappropriate and misleading, they however, are divided when asked about whether Islamic funds require an alternative performance measurement model that could better reflect the noble motives and the constraints faced by the funds. Respondents have cited three reasons for supporting the idea namely the growing Islamic fund industry, the need to have a unique identity and proper measurement as well as for academic purposes. The statistics have shown that Islamic funds continue to attract investors' interest and despite that the size of the current Islamic funds is still substantially smaller than the size of conventional funds, there is no doubt that the Islamic fund industry is nonetheless poised to grow even bigger both in terms of size and value. In view of this, it was argued that there will come a time when the Islamic fund industry will want to enhance its self-esteem by having its very own identity where it can significantly distinguish itself from its conventional counterpart. This includes a new portfolio performance measurement model that will give a more accurate valuation of Islamic funds' performance. Hence, at least for the time being, the attempt to develop an alternative portfolio valuation model is likely to be spearheaded by the academic community since the task requires both intellectual and industry input at different stages of its development.

In contrast, the rationale for rejecting the idea of developing the alternative portfolio measurement model is largely based on the current state of the Islamic fund industry. Most respondents argued that the new model is neither needed nor practical *at the moment* for two reasons. Firstly, the majority of fund managers are not using the standard portfolio measurement model such as the Sharpe Index, the Treynor Index or the Jensen-*alpha* Index when evaluating their fund performance. Instead, the popular approach used by fund managers is simply the peer group comparison whereby fund managers compare their funds' performance against rival funds of similar category. In practice, fund managers mostly refer to mutual funds ratings issued by third parties such as *Lipper* and *Morningstar* which are published on a regular basis on the internet as well as in selected financial newspapers or magazines. Therefore, although rather simplified, the practice is widely accepted as the norm of the industry for measuring fund performance. Secondly, some respondents argue that it will be almost impossible to

quantify the additional variables such as the religious or ethical values, *Shariah* elements, real intention and corporate social responsibility due to their subjective nature. Hence, while it may be possible to identify all the relevant variables affecting Islamic funds, the difficulty in quantifying these variables and later fitting them into an existing or newly created model will greatly impede the attempt to develop the alternative model, particularly when addressing the validity and reliability issue of the new or modified model later. Other reasons mentioned by respondents are the insufficient infrastructure within the Islamic fund industry which refers to the limited *Shariah*-compliance financial instruments, reference index, market size and industry players as well as the unavailability of a *Shariah* rating agency; the lack of demand especially from Islamic fund managers themselves who actually are the actual intended users of the alternative model; and, the perception that the traditional portfolio performance measurement models are sufficient and suitable for evaluating Islamic funds since they argue that return and risk factors remain the two most important variables even for Islamic funds.

In view of the current considerable lack of interest among industry practitioners towards the alternative portfolio performance valuation model and the significantly limited resources and means to pursue the development of the new model, it is therefore assumed that the time is not yet suitable for such a model to be created. In this respect, although the task of this study may have probably changed, its ultimate aim to find an innovative way to help improve the performance assessment method for the Islamic fund industry remains nonetheless largely intact. Subsequently, this analysis has looked into the issue from a rather different angle by examining the current handling of Islamic funds with an intention to determine the fund managers' perception towards how *Shariah* principles are being appreciated and adopted by fund management companies. This change of focus is made necessary following comments by several respondents who questioned the real intention and commitment of fund management companies, particularly those owned or dominated by non-Muslim owners or fund managers. They argued that since some fund management companies are treating their Islamic funds as just another product line with profit becoming the primary motive behind their Islamic funds offering, these companies may not be capable to appreciate the true spirit of Islamic teachings or achieve the *Shariah* purposes through their Islamic funds. They are also concerned that the fund management companies' focus of maximising return from their Islamic funds would exhort the companies to compromise on *Shariah* principles in certain

parts of the handling processes except those which are necessary for ensuring that their Islamic funds remain *Shariah*-compliant. Similarly, the commitment of these companies to lead in the development of the Islamic fund management industry - which could pave the way for the creation of more innovative *Shariah*-based financial products and greater understanding of the *Shariah* principles among fund managers and promoters of their Islamic funds - is also questionable.

Hence, there is a serious doubt as to whether the entire process of the existing Islamic funds' handling has purely conformed to the true Islamic teaching and *Shariah* aspiration, or some of the fund management companies may have merely acted to fulfil the minimum regulatory requirement for their funds to remain *Shariah*-compliant. This concern was eloquently expressed by a respondent in the following quotation extracted from his interview transcript in which he questioned the sincerity of fund management companies, particularly those which offer *Shariah*-compliant funds through the Islamic window concept:

> When you run by a window, it's just a by-product, as long as I comply (with the *Shariah*). The approach is not holistic. They have the forms but there's no substance. They may have the body, but not the soul.

Furthermore, the observation and analysis of the current fund management companies' practices have revealed that the operation of the so-called Islamic fund management has primarily focussed on the *halal* stocks' screening or making sure that their Islamic funds invest only in *halal*-approved securities. The results also reveal a serious lack of understanding towards the *Shariah* principles and objectives even among Islamic fund managers, whilst the separation of roles between fund management companies and the *Shariah* advisory board has resulted in a lower incentive for the former to further enhance the *Shariah* knowledge among their key personnel.

In view of this, perhaps what the Islamic fund industry currently need is a method to measure how comprehensively the *Shariah* principles are being applied by fund management companies. The method may be designed in the form of a *Shariah* rating assessment with an objective to measure the extent to which a fund management company has really embraced the Islamic teachings and the *Shariah* purposes in the operation of its *Shariah*-compliant funds. The area of interest for assessment includes the

objectives and nature of the Islamic funds; the management and operations of the fund; the *Shariah*-compliance practice and *Shariah* understanding; as well as the company's commitment towards socially responsible investment (SRI), ethical issues and corporate governance. Certainly, the *Shariah* rating assessment method would require further study to examine its feasibility which is beyond the scope of this study. Nevertheless, the proposed method would be unique to the Islamic fund industry and is poised to contribute to the future development of the industry positively by strengthening investors' confidence and promoting a holistic approach in the Islamic fund industry. More on this proposal will be discussed in the conclusion chapter.

To conclude, although the respondents have generally agreed that Islamic funds are essentially different from conventional funds which render a direct comparison of their performance rather inappropriate and misleading, they however, believe that there is no urgent need *at the moment* to develop an alternative portfolio performance measure specifically for Islamic funds. Their main argument is that there is a considerable lack of demand for such a model from fund managers while the traditional portfolio performance measurement models are also applicable for Islamic funds, as well. The other constraints are the difficulty to quantify religious or *Shariah* variables and the insufficient infrastructure of the current Islamic fund industry. In contrast, fund managers who supported the idea argue that the model will provide the Islamic fund industry its unique identity, especially considering that the industry will continue to grow on the back of strong demand from investors. However, the attempt to develop the alternative model is best considered to be an academic quest in view of the current lack of interest in the model among industry practitioners. Otherwise, as shown by Figure 8.7, the current state of Islamic fund industry will certainly remain in status quo if no action is initiated to further improve the industry.

8.5 CONCLUDING REMARKS

This chapter has analysed the existing Islamic fund operations using a qualitative analysis method of face-to-face interviews involving seven Islamic fund managers in Malaysia. The analysis is intended to complement the quantitative analysis method by providing primary data from industry practitioners on the actual operation of Islamic fund

management and their perception towards the issues involving Islamic funds' performance. The analysis has found that Islamic funds are particularly characterised by their *Shariah* identities but tend to be smaller relative to conventional funds in terms of their fund size, fund subscription rate and return to investors. With regards to the real intention of the fund management companies, the analysis found that economic-related motives are normally the main reasons behind the offering of Islamic funds. The analysis also discovered that Islamic funds' performance is significantly influenced by their fund managers' special investment skills, the general market condition, the stock and industry selection approach of their fund managers, and the consequences of *Shariah*-compliance. While the first three factors may have a positive impact on the Islamic funds' performance, the *Shariah*-compliance effect however, is more likely to affect the funds' performance adversely. The analysis also revealed that although the existing Islamic funds have all been certified as *Shariah*-compliant by the SC, there is still a huge gap in terms of *Shariah* understanding and the adoption of *Shariah* principles in the creation of the Islamic funds, especially when considering that the funds are created mostly by mimicking conventional funds. Despite agreeing that Islamic funds are essentially different from conventional funds, the respondents argued that there is no urgent need to develop an alternative portfolio performance measurement model for Islamic funds, mainly due to the current lack of demand and the various shortcomings in the Islamic fund industry.

With regards to the fund performance valuation, the respondents have not totally rejected the idea that Islamic funds may require an alternative valuation model but they contend that such a model is not urgently needed *at the moment*. Ironically, to suggest that the economically-driven traditional portfolio valuation models in their original construct are applicable for Islamic funds while, on the other hand, acknowledging the philosophical differences between the two types of funds would put Islamic funds in a rather awkward position when it comes to measuring the performance properly. This is because, any valuation model which fails to give due recognition to the attainment of socially beneficial motive beyond the mere pursuit of monetary gains and has equally failed to properly account for the *Shariah* constraints that compromise Islamic funds' performance will not be able to give accurate measurement of Islamic funds' performance, hence the true potential of Islamic funds can never be realised. In view of the rapidly growing Islamic fund industry, the phrase "one size fits all" may not

necessarily be applicable to the Islamic fund valuation but the Islamic fund industry presently has no other choice except to embrace the traditional portfolio valuation models in the absence of any alternative model. Perhaps, what is needed is a form of a paradigm shift in the performance measurement approach, whereby superior performance is not only defined in terms of the maximum monetary gains but also by the success of an investment in achieving non-pecuniary objectives by maximising its benefit to the society, environment and other stakeholders. The growing interest towards ethical or socially responsible investment (SRI) as well as corporate social responsibility (CSR) clearly shows that general investors are increasingly diverting from being inward looking or self-centred individuals concerned only with enriching themselves without due regards to the interest of the other stakeholders, into more virtuous individuals equally concerned about the betterment of the other stakeholders, thus bringing them closer to the *homo islamicus* individuals aspired by the Islamic teaching. Therefore, it is important to pursue this study further to ensure the orderly and genuine development of the Islamic fund industry and to provide the industry with its very own identity. Without further study, the Islamic fund industry will certainly remain in its status quo with limited prospect of developing further to establish its unique identity or to reduce its dependency on conventional practices.

Chapter 9

CONTEXTUALISING THE FINDINGS: AN INTERPRETATIVE DISCUSSION

9.1 INTRODUCTION

This chapter contextualises the findings from the three sources of analysis methods namely the literature review, the quantitative analysis and the qualitative analysis. The literature review discussed in Chapter 2 to Chapter 3 looks into modern portfolio theory and past studies related to mutual fund performance as well as the nature and performance of ethical and Islamic funds. Chapter 4 discusses the statistical data and literatures pertaining to the growth and performance of the Malaysian stock market and unit trust fund industry. Collectively, the literature review provides the theoretical foundation and the necessary input from which this study has evolved. The last two chapters have examined the characteristics, performance and operation of Islamic funds through both the quantitative analysis and qualitative analysis. The quantitative analysis discussed in Chapter 7 attempts to identify the general return and risk characteristics as well as the performance of Islamic funds through hypothetical portfolios comprising entirely of Malaysian listed companies. Though the quantitative analysis has successfully produced meaningful results from which the general characteristics and performance of Islamic funds can be established, certain issues related to Islamic fund operation such as the *Shariah* effects and fund performance valuation cannot be analysed from the secondary data alone. To overcome this shortcoming, the qualitative analysis was employed to obtain primary data from industry practitioners through face-to-face interviews with Islamic fund/investment managers in Malaysia as discussed in Chapter 8. As this study adopts the *methodological triangulation technique* of data analysis, the findings from the three different methods of analysis are now integrated and discussed in this chapter. The integration process allows the findings to be linked together, thus broadening the perspective of the subject interest. In addition, the consistencies of the findings can be validated through the cross referencing of the results from the literature review, quantitative analysis and qualitative analysis. This enables in-depth analysis and credible

inference to be made. This chapter is organised as follows. The results discussion revolves around the four research questions of this study whereby for each question relevant findings obtained from the three sources of analytical methods are discussed and interpreted. The chapter then ends with a conclusion.

9.2 DISCUSSION ON THE FINDINGS

The findings from the quantitative analysis and qualitative analysis is summarised in Table 9.1. In this chapter, the scope of the discussion is focussed upon the four problem statements of this study, in which, the findings from the three sources of analysis methods are intertwined to make meaningful inferences of the general characteristics and performance of Islamic funds. The four problems statements are related to the general characteristics of return and risk of Islamic funds; the performance trend of Islamic funds; the impact of *Shariah* requirements on the performance of Islamic funds; and, the actual Islamic fund management practice and performance valuation.

9.2.1 The General Characteristics of Return and Risk of Islamic Funds

This section elaborates on the general characteristics of return and risk of Islamic funds. However, prior to discussing the return and risk profile of Islamic funds, the discussion will focus on the structure of Islamic funds, particularly the underlying contracts between investors and fund management companies/fund managers of Islamic funds and the *real* motives of fund management companies offering Islamic funds. The findings are mainly deduced from the literature reviews and qualitative analysis as secondary data does not provide relevant input on the contract and real intention of fund management companies.

Table 9.1: Summary of the Findings

Subject Interest	Findings of Quantitative Analysis	Findings of Qualitative Analysis
1) The general characteristics of return and risk of *Shariah*-compliant portfolio		
i) Investment approach.	Do not invest in *riba*, *gharar* and other non-*Shariah*-compliant stocks	Do not invest in *riba*, *gharar* and other non-*Shariah*-compliant stocks
ii) Return characteristics of Islamic-based portfolio.	Generally lower than unrestricted portfolios except for large-capitalised stocks portfolio or if using Islamic benchmarks.	Return is comparable with conventional portfolios if measured using Islamic-based benchmark instruments.
iii) Risk characteristics of Islamic-based portfolio.	Generally higher than unrestricted portfolios except for large stocks.	Risk is comparable with conventional portfolios.
iv) Correlation of return.	Sectors in Islamic-based portfolio are positively correlated with each other and with the index.	Return of Islamic-based portfolio is positively correlated with the index.
v) Fund size and subscription rate.	Fund size is smaller than conventional funds.	Fund size and subscription rate are smaller than conventional funds.
vi) Favourite stocks and sectors of Islamic-based portfolio.	Large-capitalised stocks involved in construction, plantation, properties and oil-related sectors.	Large-capitalised stocks with sound fundamentals. Preferred plantation, construction and properties sectors.
2) The performance of *Shariah*-compliant portfolio		
i) Performance comparison between Islamic-based portfolio and conventional portfolio.	Performance is generally comparable with conventional portfolios but below the return of sin portfolios. However, the difference in performance is not statistically significant.	Not significantly different since performance is heavily influenced by fund/investment managers' superior investment skills.
ii) Performance trend of Islamic-based portfolio.	Generally underperformed in bullish market but outperformed during bearish market.	Outperformed during bearish market but underperformed during bullish market.
iii) Size effect in the performance of Islamic-based portfolio.	Its large-capitalised portfolio is the best performing portfolio and is far superior to others and the index.	Islamic funds that performed mainly invest in large-capitalised or heavyweight stocks.
3) The impact of *Shariah* requirements on the performance of *Shariah*-compliant portfolio		
i) Investment asset or securities universe of Islamic-based portfolio.	Vast choices of securities are available since majority of listed stocks are *halal*-approved. However, fundamentally sound stocks are limited as most of the stocks are trivial, investment wise.	*Shariah* restrictions do not affect performance since there are more *halal* stocks available. Islamic funds normally invest in less than 40 stocks mainly in heavyweight and fundamentally sound stocks.
ii) The net effect of Shariah requirements on portfolio performance.	Securities selection limited to *halal*-approved stocks only. This resulted in over reliance on few profitable sectors or stocks to support its earnings and difficulty to outperform unrestricted portfolio.	Fund to invest only in *halal*-approved stocks. Operating cost increases due to the need to hire *Shariah* scholars thus affecting return performance adversely.
4) The fund management practice and performance measurement of *Shariah*-compliant portfolio		
i) The necessity for an alternative portfolio performance measurement model specifically to evaluate Islamic-based fund.	The standard portfolio performance measurement models were used due to the unavailability of alternative valuation models, and similarities in valuation approach between Islamic and conventional portfolios.	Difficulties in developing an alternative portfolio valuation model due to insufficient infrastructure, lack of demand, the suitability of the existing models, & simplicity in assessment techniques.
ii) Portfolio management strategy of Islamic-based fund.	The strong mean return reversion trend indicates that Islamic funds should adopt an active portfolio management strategy.	Fund managers adopt an active portfolio management strategy in order to maximise return.

In general, the study has found that the structure and operation of Islamic funds are not much different from conventional funds. This is primarily due to the existing Islamic funds having been designed based on the structure of conventional funds and managed in similar way to the fund management companies' management of their conventional funds, except with respect to *Shariah*-compliance requirements. Therefore, while the existing Islamic funds may be considered as *Shariah*-compliant by virtue of their avoidance in investments that involved the production of non-*halal* (*haram*) products, *riba* (interest) and *gharar* (uncertainty or speculation), they fall short of fulfilling the third criteria that could distinguish them from their conventional counterparts: namely the adoption of profit and loss sharing (PLS) as the preferred mode of venture or mean for profit distribution between investors and fund management companies as outlined by Presley and Sessions (1994), Hourani (2004) and Usmani (2005). Instead, similar to conventional funds, the existing Islamic funds have adopted the fee-based arrangement (*al-ujr*) in which the fund management companies/fund managers are paid certain percentage of fund management fees in return for their services. The weakness of the fee-based contract was explained in greater detail in the previous chapter (see Section 8.4.2.1). The major disadvantage of the contract is that it exposes Islamic funds to a moral hazard problem as argued by Wilson (1997). In this case, since fund management companies/fund managers are assured of receiving their income regardless of whether the Islamic funds generate a positive return or otherwise, there is a risk that the fund management companies/fund managers may not be acting in the best interest of the Islamic fund investors or putting their best effort or commitment towards the funds. Instead, a PLS-based contract will minimise the moral hazard risk by tying the service fees with the actual performance of the Islamic fund directly, hence the income to be received by fund management companies/fund managers will correspond with the actual return generated by the funds at a pre-determined PLS ratio between investors and the fund management companies/fund managers. The advantage of the PLS-based type contract was reveal by Stracca (2006) and Khorana *et al*. (2007) who found a positive correlation between the return of mutual funds and the ownership level of the fund managers.

The study also found that economic-related motives, rather than religious motives, are the main motivating factors behind the Islamic funds offering by fund management companies, particularly if the funds are offered under the Islamic window concept

together with conventional funds. The economic motives include the fund management companies' intention to capitalise on the rising demand for Islamic fund products from general investors, to maximise their return or to enhance their competitive advantage. This perception is derived through deduction made from the feedback of the Islamic fund managers, the income purification practice and the apparent lack of appreciation towards Islamic principles and understanding in the creation and management of Islamic funds. Unfortunately, by putting the economic motives above the religious motives, the existing Islamic funds may have strayed away from the fundamental aim of Islamic finance which Zaher and Hassan (2001: 158) suggested as "to fulfil the teaching of the Holy *Quran* as opposed to reaping maximum returns on financial assets". In addition, if the economic motives become the main reason for fund management companies offering Islamic funds, then the intention represents a deviation from the principal objective of Islamic funds as suggested by Shah (2008: 15) as "to attract investors whose investment decision is based on the guidance provided by the Islamic *Shariah*". Therefore, the over emphasis of pecuniary return and the limited understanding of Islamic or *Shariah* principles may affect the ability of the existing Islamic funds to help in attaining the *Shariah* purposes (*maqasid al-Shariah*) or to achieve the objective of transforming Islamic fund investors closer into *homo Islamicus* rather than *homo economicus*. The concern over the real intention of fund management companies is not exclusive to Islamic funds: similar doubt was also raised with regards to ethical funds. Several authors such as Lewis and Cullis (1990), Davis (1996) as well as Cowton (1994) and Anderson *et al.* (1996) (Cowton and Anderson *et al.* are cited in Sparkes, 2001: 197) have questioned the real motive behind the offering of ethical funds by fund management companies, arguing that the ethical fund is essentially an innovative marketing tactic for product differentiation by the companies or is used as a strategy to capitalise on the growing demand for ethically-oriented investment. A criticism by Haigh (2006) that fund managers of ethical funds consider ethical motives as just a "secondary importance" to monetary return prompted him to label ethical funds as a mere "camouflage play" by fund managers.

Therefore, all the arguments suggest that, despite offering Islamic or ethical funds, the main purpose of the issuing fund management companies is actually to maximise their profit rather than genuinely intending to promote religious or ethical causes. As revealed by the interview analysis, the emphasis towards return is unavoidable since return is crucial for the survival of the funds and the companies/fund managers themselves. It is

fair to assume that a well performing mutual fund is always preferred by investors than a poorly performing fund, regardless of the fund's objectives. Notwithstanding however, though some may argue that the real intention is more of a philosophical issue and it is impossible to measure the intention of fund management companies, it is nevertheless a crucial issue, since real intention could have major consequences on the creation process and proper handling of the Islamic funds.

Analysis pertaining to the return and risk characteristics indicate that Islamic funds generally have a lower return when compared to conventional funds and the market index. This is evident from the actual published data and the quantitative analysis. Table 4.5 (page 102) shows that the 5-year cumulative return of the Malaysia Islamic Equity is 17.06 per cent which is lower than the conventional Malaysia Equity (29.60 per cent) and the KLCI (24.78 per cent). Similarly, the average annual return during the same period for the three portfolios is 2.92 per cent, 4.96 per cent and 4.53 per cent, respectively. Results from the quantitative analysis also reveal similar findings as return of SAP is lower than return of CP, NSAP and the KLCI in all sub-periods. Although there was no estimate given by the Islamic fund managers, they generally agreed that return of Islamic funds is lower than return of conventional funds when the two types of funds are compared directly. In terms of portfolio risk, the actual data implies that the return of Islamic funds is more volatile than the return of conventional funds and the benchmark index particularly in the short-term period (less than one year) which was later supported by the empirical analysis that shows SAP has higher standard deviation and portfolio beta in comparison to conventional and sin portfolios as well as the market index.

The study suggests that one factor which could determine the return and risk characteristics of Islamic funds significantly is the attributes of the component assets in the Islamic funds' portfolio, particularly the size of equities and the type of industries that the Islamic funds invested in. In this respect, the quantitative analysis indicates that the *halal* stock screening reduces the number of stable, large-capitalised stocks which Islamic funds are allowed to invest in, thus leaving more of the volatile, small-capitalised stocks for Islamic funds. Comparatively, the high concentration of investment in small-capitalised stocks is also common in ethical portfolios as reported by Luther and Matatko (1994), Sparkes (1995), Gregory *et al*. (1997), Wilson (1997) and Scholtens (2005). Therefore, the rather unsatisfactory return and risk profile of Islamic funds may be due to

the presence of a large number of small-capitalised stocks in their portfolio whose returns are arguably more volatile as evident from both the actual data and the empirical analysis. Table 4.5 shows that that the Malaysia Islamic Equity-Smallcap Fund posted a total loss of 5.42 per cent, or an average loss of 1.13 per cent per year, in the last 5-year period to July 2009. This is in line with the results of the empirical analysis, which reveals that small-capitalised stocks portfolio of SAP (SAP30 and SAP40) posted a total loss of 4.57 per cent or an average loss of 0.91 per annum during the 5-year period from 2004 to 2008 (the crisis period). SAP30 and SAP40 also have the highest risk compared to their conventional counterparts. This is supported by the actual data which indicates a substantial fluctuation in the performance of the small-capitalised stocks when the Malaysia Islamic Equity-Smallcap Fund posted a positive return of 20.08 per cent and 21.20 per cent for 3-month and 6-month periods, respectively but its cumulative 1-year performance shows the small-capitalised stocks suffered a loss of 7.58 per cent. Consequently, the findings also signify that although there are more *halal*-approved stocks available, the majority of the stocks however are trivial, investment wise.

In terms of correlation, the quantitative analysis suggests that returns of Islamic funds' component stocks are positively and strongly correlated between each other and with the benchmark index. One plausible reason is that most of the funds' main income contributing stocks comprises of companies involved in defensive industries such as plantation, food, oil, and industrial engineering as well as project-based industries such as construction and properties sectors whose activities are closely interrelated. Furthermore, the nature of their business which involves sustainable crops and long-standing contracts makes these stocks suitable for long-term investment and favoured by fund managers. The strong positive correlation however, does not augur well for Islamic funds since it implies that the component stocks or industries would have similar performance depending on the market condition. Since positive correlation implies that the portfolio risk of Islamic funds is not properly diversified, Islamic funds are not fully protected despite investing in various sectors. The finding that Islamic funds are not properly diversified is supported by Shah Zaidi *et al*. (2004), Abdullah *et al*. (2007) and the fund managers' contention that Islamic funds have strong positive correlation with the market index. Poor diversification is also observed in ethical funds' portfolios as reported by Lewis and Cullis (1990), Gregory *et al*. (1997), Tippet (2001), Luther and Matatko

(1994), Farmen *et al.* (2005), Geczy *et al.* (2005, cited in Schröder, 2007) and Chong *et al*. (2006).

In contrast, conventional funds have more industries whose returns are less or are uncorrelated. Though there are some cyclical sectors in conventional funds such as finance and technology industries which have high correlation with the market index, the funds also enjoy considerable support from stable industries such as tobacco and alcoholic beverages as well as cash-rich industries such as gaming which have low or negative correlation. Lau (2007) stated that low or negative correlation help enhances fund performance whilst the advantage of having "sinful industries" is mentioned by Bloch and Lareau (1985), Moskowitz (1992) and Luck and Tigrani (1994) (all cited in Tippet, 2001; 172) who argued that investment in alcohol, tobacco and gambling industries enable mutual funds to significantly outperform the S&P 500 index. This explains why conventional funds are able to sustain their earnings in any given market condition and outperform Islamic funds.

The other notable characteristics of Islamic funds are related to the fund size and subscription rate and the type of their favourite industries. Both the actual statistics and the quantitative analysis indicate that Islamic funds have smaller fund size and value relative to conventional funds. Table 4.3 (page 94) reveals that the total net asset value (NAV) of Islamic funds in 2008 stood at RM17.80 billion, representing just 11.1 per cent of the total NAV of the Malaysian fund management industry. This gives an average per unit NAV of RM0.39 for Islamic funds against RM0.76 for conventional funds. Similarly, the empirical analysis based on the hypothetical portfolios shows that the 2008 value of the 770-stocks SAP is RM1,078.21 which is lower than the value of the 890-stocks CP of RM1,384.98. This gives an average per unit value of RM1.40 for SAP against RM1.56 for CP. Analysis of Islamic fund prospectuses and the input obtained from the interview analysis also reveals that the size of Islamic funds is lower than conventional funds. In terms of subscription rate, Islamic funds have lower subscription rates as reflected from the actual statistics where, in 2008, there were 46.22 billion units of Islamic unit trust in circulation which is four times smaller than the 186.79 billion units subscribed for conventional funds. The small fund size and lower subscription rate are due to Islamic funds being regarded as a relatively new product in the industry in comparison to the more established conventional funds. Analysis of various fund

prospectuses also reveals that conventional funds have more varieties as compared to Islamic funds, thus making the former more attractive to investors. Since conventional funds are well established, they are more widely marketed through the extensive network of conventional financial institutions or unit trust/mutual fund agents, thus explaining why conventional funds are relatively bigger and better subscribed by general investors as compared to Islamic funds. The importance of historical performance and fund size in determining fund subscription rates is highlighted by Ramasamy and Metthew-Yong (2003) who also found that transaction costs, the type of fund and the quality of fund managers are crucial factors that can affect fund subscription rate.

The interview analysis suggests that Islamic funds are mainly focussed on large-capitalised stocks especially those involved in defensive or stable industries such as plantation and construction sectors. The preference towards heavyweight stocks is driven by the stocks' sound fundamentals and stable prices. It also signifies the tendency of Islamic fund managers to avoid small-capitalised stocks which is most probably due to the high volatility of the small-capitalised stocks as evident from the empirical analysis and the actual data. This finding is confirmed by the results of the empirical analysis that large-capitalised stocks of SAP could outperform conventional funds and the market index. The analysis also found that plantation, construction, industrial engineering, oil, automobile, telecommunications, and properties stocks are the major income contributors to the *Shariah*-compliant portfolio. Hence, the empirical analysis finding that Islamic funds should concentrate on large-capitalised stocks is in-line with the investment preference of the Islamic fund managers.

To conclude, findings from the literature review, the quantitative analysis and the qualitative analysis implies that, relative to conventional funds, Islamic funds are generally characterised by a lower return but a higher risk; have limited numbers of profitable stocks or sectors whose returns are strongly and positively correlated; have a smaller fund size and low fund subscription rate; and are mainly invested in large-capitalised or heavyweight stocks involved in defensive industries, especially plantation-based companies. Furthermore, there are obvious similarities between Islamic funds and ethical funds in terms of their structure and performance since both are designed to meet certain investment philosophies which subject the stock selection process of the funds to certain religious or ethical filtering. However, since the findings of this study are mainly

derived from the performance of the hypothetical portfolios, caution should be applied. The performance of actual Islamic funds is also subjected to their fund managers' investment skills and expertise, the size of the Islamic funds, as well as the overall stockmarket, and economic conditions. Hence, the performance is not merely due to the smaller stock selection universe caused by the *Shariah* screening.

9.2.2 The Performance Trend of Islamic Funds

This section discusses the performance of Islamic funds against conventional funds. In general, empirical findings from past studies are deemed inconclusive in view of their contradictory findings which are attributed to the different sampling, different research methodologies and different time period employed by the studies. Studies by Yaacob and Yakob (2002), Shah Zaidi *et al*. (2004) and Abdullah *et al*. (2007) found that Islamic funds in Malaysia are able to achieve superior performance but Abdullah *et al.* (2002; cited in Nik Muhammad and Mokhtar, 2008) and Nik Muhammad and Mokhtar (2008) claimed the opposite. A study by Mueller (1994) revealed that Islamic funds in the United States underperformed conventional funds. As in the case of Islamic funds, past studies analysing ethical funds' performance also yield contradictory findings when Lewis and Cullis (1990), Mallin *et. al.* (1995), Gregory *et al*. (1997), Tippet (2001), Luther and Matatko (1994), Farmen *et al.* (2005), Geczy *et al.* (2005, cited in Schröder, 2007) and Chong *et al*. (2006) concluded that ethical funds generate a lower return as compared to conventional funds, but Sparkes (1995), Sauer (1997) and Schröder (2007) argued otherwise.

Results of this study suggest that Islamic funds generally underperform conventional funds and the market index. The quantitative analysis indicates that the performance of SAP is identical to the performance of CP which is due to the similarities in their portfolio composition as the latter invest in both *halal*-approved and non-*halal*-approved stocks. However, CP is poised to have a significant advantage over SAP since it could invest in fundamentally sound, non-*halal* stocks as well, thus making it difficult for the *Shariah*-compliant portfolio to outperform the conventional portfolio. Unfortunately, the return of SAP is far below the return of NSAP, thus confirming the advantage of investing in sin industries such as banking, alcohol, gaming and tobacco as

previously reported by Bloch and Lareau (1985), Moskowitz (1992) and Luck and Tigrani (1994) (all cited in Tippet, 2001; 172). In the qualitative analysis, Islamic fund managers admitted that the return of their Islamic funds is generally lower than conventional funds but insisted that such a direct comparison is inappropriate while claiming that their Islamic funds do outperform their own designated *Shariah*-compliant benchmarks.

Several theories have been suggested to explain the Islamic funds' underperformance such as the effect of small-capitalised stocks, poor diversification and higher operating cost. Although the number of *halal*-approved stocks far exceeded the number of non-*halal*-approved (or sin) stocks at a ratio of 6:1, the majority of the *Shariah*-compliant stocks however, are medium and small-capitalised stocks. Hence, the *Shariah* screening has excluded large-capitalised, high yielding but non-*halal* stocks particularly those involved in conventional banking and finance services, gaming, alcoholic beverages, tobacco and conglomerate sectors. Since medium and small-capitalised stocks are mainly comprised of growth stocks, their earnings and share prices are relatively more volatile than large-capitalised stocks which are categorised as either stable or income stocks. The quantitative analysis reveals that SAP's portfolio has high concentration of medium and small-capitalised stocks. Similar phenomenon is seen in ethical funds by Luther and Matatko (1994), Sparkes (1995), Gregory *et al*. (1997), Wilson (1997) and Scholtens (2005) with some of the authors attributing the relatively lower performance of ethical funds to the small-capitalised stocks. The results of this study confirmed that the overall return of SAP is adversely affected by the high volatility of the small-capitalised stocks in the portfolio. Perhaps, the volatile performance of small-capitalised stocks may have affected the return of the Malaysia Islamic Equity-Smallcap (see Table 4.5: page 102) the same way it has inflicted lower performance on SAP. The high risk associated with small-capitalised stocks may also be the main reason behind the Islamic fund managers' preference towards large-capitalised stocks as revealed by the interview analysis.

The quantitative analysis also shows that SAP's portfolio is not properly diversified since returns of its component stocks are positively correlated, thus resulting in the portfolio being unable to maximise the benefit from diversification. This finding is consistent with Shah Zaidi *et al*. (2004) and Abdullah *et al*. (2007) as well as the fund

managers' contention that Islamic funds have strong positive correlation with the market index. The findings of this study imply that the returns of the major component industries in a *Shariah*-compliant portfolio are likely to move in similar directions, thus reducing the kind of protection that the Islamic fund may enjoy if it has a greater number of uncorrelated stocks or industries in its portfolio. This is aggravated by the fact that *Shariah* restrictions have also reduced the number of profitable industries that the Islamic fund is able to invest in, thus resulting in overreliance of the fund towards a few profitable sectors to support its earnings. Unlike the Islamic fund, a conventional fund is able to invest in a wide variety of profitable industries that have low or negative correlation, thus enabling the fund to maximise the benefit from diversification, reduce its over-reliance on certain industries, and protect its portfolio value in any given market environment due to the presence of uncorrelated industries in its portfolio. The underperformance of Islamic funds is also attributed to the higher operating cost since Islamic funds incur additional expenses, particularly the cost of appointing *Shariah* scholars and officers as argued by Islamic fund managers. Poor diversification and higher operating costs were also cited as the causes of underperformance of ethical funds by Lewis and Cullis (1990), Gregory *et al*. (1997), Tippet (2001), Farmen *et al.* (2005), Geczy *et al.* (2005, cited in Schröder, 2007) and Chong *et al*. (2006).

Fortunately however, not all evidence is against Islamic funds. The findings of the quantitative analysis suggest that Islamic funds which focus on large-capitalised stocks are able to outperform conventional funds, particularly in bearish market condition. The size effect favouring large-capitalised stocks is evident from the quantitative analysis that shows the spectacular performance of the SAP10 portfolio which outperformed other portfolios including all SAP's smaller size portfolios, conventional and sin portfolios as well as the KLCI. The ability of Islamic funds to generate a higher return as compared to conventional portfolios and the benchmark index in different time periods is also evident from the actual data as revealed by Table 4.5 (page 102). The table also provides evidence that Islamic-based large-capitalised stock funds performed better than smaller-capitalised stock funds. The study indicates that the superior performance is attributed to the investment in high-yielding and stable heavyweight stocks, particularly those involved in plantation, construction, oil-related and properties sectors.

The findings of the quantitative analysis that Islamic funds could outperform conventional funds, particularly in bearish market condition, is supported by past studies such as Abdullah *et al*. (2007) and Abdullah *et al.* (2002; cited in Nik Muhammad and Mokhtar, 2008) and reaffirmed by the Islamic fund managers. The ability of Islamic funds to sustain their performance in bearish market condition is particularly due to the presence of defensive industries such as plantation and oil-related stocks which provides a considerable cushion to the funds' earnings. This also signifies that the Islamic fund is a good candidate for defensive investment strategy which is consistent with the findings by Abdullah *et al*. (2007) and indicated by the overwhelming performance of SAP over CP and NSAP portfolios in 2007 and 2008 that coincided with the substantial increase in Islamic funds' subscription rate as shown in Table 4.3 (page 94). In 2007, the total units in circulation for Islamic funds doubled to 36.35 billion units from 18.55 billion units in 2006, resulting in the total NAV increasing to RM16.86 billion from RM9.17 billion during the same period. In 2008, the total units in circulation rose moderately to 46.22 billion valued at RM17.80 billion. The sharp increase in the number of units in circulation and the value of the funds reflects huge interest and growing investors' confidence toward Islamic funds as a viable investment instrument particularly during the relatively volatile and poor market condition.

Despite the observed differences between return of the *Shariah*-compliant fund and the return of the non-*Shariah*-compliant funds, the study found that the differences are not statistically significant. Therefore, the findings are not robust enough to infer that the return of Islamic funds is inferior to the return of conventional funds or vice versa. This finding is in line with the Islamic fund managers' contention that although Islamic funds underperform conventional funds, the return and risk of the two types of funds are not substantially different, and Islamic funds are still able to generate return comparable to conventional funds. The fund managers' argument that the return and risk characteristics of Islamic funds are similar to conventional funds may be caused by two reasons. Firstly, their opinion is based on the performance of the actual Islamic funds which, based on their argument, are mainly invested in large-capitalised stocks. Consequently, the appropriate comparison is to examine the performance of SAP's large-capitalised stocks portfolio (SAP10) with equivalent portfolios in CP and NSAP and the market index. If this is the case, then the finding of the quantitative analysis that SAP10 could outperform both the non-*Shariah*-compliant portfolios and the KLCI is consistent

with the fund managers' contention. Secondly, their opinion is based on the premise that the performance of Islamic funds is measured against either *Shariah*-compliant or customised benchmarks but not conventional benchmarks. This is made explicit by the evidence obtained from the Islamic fund prospectuses and the fund managers' assertion that the two types of funds are fundamentally different hence it is inappropriate to make a direct comparison between Islamic funds and conventional funds. Again, if this is the case, then the findings of the quantitative analysis that the risk-adjusted return of Islamic funds could outperform conventional funds when performance is measured against *Shariah*-compliant benchmarks is also consistent with the fund managers' contention. Statistically insignificant results involving ethical funds are also reported by Luther and Matatko (1994), Bauer *et al*. (2005), Bello (2005), Kreander *et al.* (2005), Scholtens (2005) and Bauer *et al*. (2006). The authors concluded that although the return of ethical funds is different from the return of conventional funds, the difference however, is not statistically significant. A similar finding was reported by Boasson *et al*. (2006) and Schröder (2007) when they compared the performance of ethical funds vis-à-vis the market index.

To conclude, the findings of this study suggest that the performance of Islamic funds is generally below the performance of conventional funds and the market index. The underperformance is attributed to the volatile performance of small-capitalised stocks, poor diversification and higher operating costs incurred by Islamic funds. The evidence showing the difference in the portfolios' returns however, is not robust statistically hence the findings should be inferred cautiously and cannot be used to make a generalisation that the return of Islamic funds is inferior to the return of conventional funds, or vice versa. The study also indicates that Islamic funds which mainly invest in large-capitalised stocks could outperform conventional funds and the market index. The valuation of Islamic funds is also sensitive to the benchmarks used for performance comparison since there is evidence that Islamic funds are able to outperform conventional funds if the performance is benchmarked against *Shariah*-compliant instruments. While the findings from the literature review, quantitative analysis and qualitative analysis of this study are consistent between each other, the findings reveal clear similarities between the performance of Islamic funds and the performance of ethical funds.

9.2.3 The Impact of *Shariah* Requirements on the Performance of Islamic Funds

This section elaborates the impact of *Shariah* requirements on Islamic fund performance. The study found that *Shariah* requirements affect performance in two ways: 1) during the portfolio construction process in which *Shariah* rulings would compel Islamic funds to select and invest only in *halal*-approved securities; and, 2) it causes operating costs to increase as fund management companies would have to create auxiliary functions such as appointing *Shariah* scholars to provide them with advisory services on *Shariah* matters or to hire additional officers who will be responsible for *Shariah* monitoring, auditing and supervision to ensure the *Shariah*-compliant status of their Islamic funds.

With respect to the stock selection process, at a ratio of 6:1, there are indeed more *halal*-approved stocks than non-*halal*-approved stocks. At first glance, and as has been contended by some fund managers, the large number of *halal*-approved stocks available despite the strict *Shariah* screening signifies that *Shariah* restrictions on stock selection would not affect Islamic fund performance adversely. This led to the argument that *Shariah* restrictions should not be perceived as an obstacle for investors or Islamic fund managers to create an efficient portfolio comprising of only *halal*-approved stocks that meet their return and risk objectives. They also argued that the *Shariah* restrictions will not put Islamic funds in a disadvantaged position for not being able to invest in certain high-yielding but non-*halal*-approved stocks as the shortcoming can be compensated through a tactical investment strategy by creating a combination of two or more *halal*-approved stocks which will produce a similar return and risk exposure to investment in the high-yielding but non-*halal*-approved stocks. In this regard, there are two interesting issues to be examined here: 1) do the vast number of the *halal*-approved stocks give any significant advantage to Islamic funds?; and, 2) if the *Shariah* restrictions have not affected Islamic funds' return adversely or if the shortcoming of not being able to invest in high-yielding but non-*halal*-approved stocks can be remedied by embarking on the tactical investment strategy, then arguably, the realised return of Islamic funds should be more or less equal with the realised return of conventional funds.

Unfortunately however, evidence from the published data of the actual Islamic funds' return and price performance and the results from the quantitative analysis indicate that the realised return of Islamic funds is lower than the realised return of conventional

funds or the market index, particularly over a long-term period. In addition, the fund managers themselves generally agreed that the return of Islamic funds is relatively lower than the return of conventional funds. This implies that neither do the vast number of *halal*-approved stocks give any significant advantage to Islamic funds, nor is the tactical investment strategy always successful. As discussed previously, the empirical analysis reveals that the large number of *halal*-approved stocks does not necessarily makes Islamic funds better off than conventional or sin funds since the more crucial factor in the context of an investment portfolio is the quality of the component stocks, particularly the correlation among the different stocks and industries in the portfolio to ensure that the portfolio is able to maximise the benefit from diversification. The empirical analysis also indicates that there are only a small number of large-capitalised, fundamentally sound *halal*-approved stocks, whilst the majority of the *halal* stocks are trivial investment-wise, considering that most of the stocks are medium and small-capitalised companies. Since the *Shariah* restrictions have ruled out investment in most heavyweights stocks, particularly those involved in conventional finance, conglomerate, alcoholic beverage, tobacco and gaming industries, Islamic funds are left with limited number of high-yielding stocks or profitable industries, thus increasing the risk of overdependence towards a few stocks or industries to support the funds' earnings.

The published data showing the existing Islamic funds' underperformance has an even more startling and serious implication towards the actual investment capability or competency of Islamic fund managers. The data implies that some Islamic fund managers are unable to outperform the market index or even the risk free rate (the 3-year and 5-year average annual return of Islamic-based *mudharabah* investment account is 3.56 per cent and 3.44 per cent, respectively). Hence, although the tactical investment strategy was purportedly feasible at least in hindsight, the success of mimicking investment in high-yielding, non-*halal*-approved stocks has two prerequisite conditions related to Islamic fund managers' capabilities: 1) special investment skills to identify the right combination of more than one *halal*-approved stock which will closely mimic the return and risk profile of the high-yielding but non-*halal*-approved stocks that the Islamic fund managers wish to mimic; and, 2) the kind of *halal*-approved stocks having the right characteristics in terms of return, risk, liquidity, price and timing needed to create a proper combination that could mimic the investment in the non-*halal*-approved stocks should be available in the first place. To date however, the issue of whether fund

managers actually posses superior investment skills is still a subject of intense debate since findings from past studies on this issue are rather inconclusive. Jensen (1968, 1969), Kon (1983), Chang and Lewellen (1984), Henriksson (1984), Chuan (1995), Sorros (2001) and Matallín-Sáez (2006) argued that fund managers generally are unable to forecast future security prices, hence generating superior return for their investors. On the contrary, some studies concluded that fund managers do possess certain investment skills, albeit with limited capability or insignificant impact to earning, such as market timing skill as found by Grinblatt and Titman (1994) and Bowden (2000) and stock selection skill as claimed by Elton *et al*. (1996), Daniel *et al*. (1997), Chevalier and Ellison (1999), Chen *et al*. (2000), Wermers (2000), and Avramov and Wermers (2006). In Malaysia, studies by Shah Zaidi *et al*. (2004) and Abdullah *et al*. (2007) found that Islamic funds are not well diversified, thus indicating a lack of stock selection skills among Islamic fund managers to identify underpriced securities. Therefore, in view that an attempt to mimic the return and risk exposure of investment in high-yielding, non-*halal*-approved stocks requires considerable investment skills on the part of Islamic fund managers, the actual data showing Islamic funds' underperformance thus raises serious doubts about the Islamic fund managers' real investment capability to generate satisfactory return for their investors.

The impact of *Shariah* requirements on operating cost is not visible in the hypothetical portfolios but was highlighted by the Islamic fund managers during the interviews. The *Shariah*-related costs are unavoidable since they are incurred in the course of ensuring that the Islamic funds remain *Shariah*-compliant. These include the requirement to appoint *Shariah* scholars to advise the fund management companies on *Shariah*-related matters or hiring *Shariah*-compliance officers responsible for monitoring, supervision and management of their Islamic funds. The *Shariah* scholars can be engaged either by developing a pool of their own internal *Shariah* experts or by outsourcing the *Shariah* scholars externally through a third party who provides such services. Either way, the additional costs will inevitably increase the administrative expenses of the Islamic fund management companies, though it might not affect the return of their Islamic funds directly. The higher operating cost is also common among ethically-oriented funds as reported by Gregory *et al*. (1997) and Tippet (2001), and it is considered as one of the main causes of lower performance by ethical funds. The adverse impact of higher expenses on fund performance is highlighted in Goldsmith (1976),

Elton, *et al*. (1996), Bers and Madura (2000), Moskowitz (2000), Wermers (2000), and Fisher and Khoury (2007). The *Shariah* requirements also introduce additional risk to Islamic funds, namely the *Shariah*-compliance risk which arises due to changes in the core business activities of an originally *halal*-approved company that render the stock to become non-*halal*. In this instance, Islamic funds are obliged to dispose of the stock which may result in substantial losses. Therefore, in order to outperform conventional funds, Islamic funds will have to earn significantly a higher return than conventional funds to compensate for the additional *Shariah* risk.

To conclude, the adherence to *Shariah* requirements or branding a fund as Islamic does not give any significant economic advantage apart from attracting pious or ethically-concerned investors. In comparison to conventional funds, the *Shariah* restrictions cause Islamic funds to be unable to invest in high-yielding, large-capitalised but non-*halal* stocks and increase the operating costs of the funds, as well. Therefore, it is essential for Islamic fund managers to possess exceptional investment skills to remedy the disadvantages of Islamic funds in stock/industry selection, and for Islamic funds to generate a significantly higher return in order to outperform conventional funds or the market index. However, to put the issue in the right perspective, this does not at all represent a weakness of Islamic funds since the underlying philosophy of the funds is actually to attain other non-pecuniary motives, including fulfilling the religious obligation although maximising profit undoubtedly remains an important objective of Islamic funds for their very survival.

9.2.4 The Fund Management Practice and Valuation of Islamic Fund Performance

This section discusses the current practices of fund management companies with respect to the operation and valuation of Islamic funds. The findings were deduced mainly from the qualitative data since the quantitative analysis does not dealt with this issue explicitly. The study found that the operation of the existing Islamic funds is essentially similar to the operation of conventional funds, particularly for fund management companies that offer Islamic funds together with their conventional funds under the Islamic window concept. Analysis based on the contents of the fund management companies' publications including their Islamic fund prospectus and other in-house publications

(annual reports, investment reports, newsletter, magazines, company website etc.) implies that the Islamic fund is generally perceived as different from conventional funds only in terms of the funds' investment in *halal*-approved securities and the separation of investment accounts. The other company's resources such as the back-office operations and fund/investment managers or unit trust agents however, are used for both Islamic and conventional funds operations. Therefore, it is not surprising that some fund management companies perceive their Islamic funds as merely another financial product without giving due recognition to the funds' underlying philosophy or religious significance.

The finding that Islamic funds are structured and managed in practically the same way as conventional funds is also rather disturbing since it implies that the current Islamic funds do not meet the two basic conditions in order to truly qualify as 'Islamic funds' as outlined by Usmani (2005). The first condition is that return from Islamic funds must be distributed on a pro-rata basis, of which, profit-and-loss sharing (PLS) is arguably the best mechanism. On the contrary, the existing Islamic funds are structured on a fee-based basis, of which, the fund management companies and fund managers received a fixed management fee for their services, hence their income is practically secured regardless of whether the Islamic funds are making profit or otherwise. The second condition is that every aspect of the Islamic funds' investment must be carried out with intention to uphold the true Islamic teachings apart from merely complying with the *Shariah* requirements. This is not limited to investment in *halal*-approved securities only but extended to all aspects of the Islamic funds' operation including at the creation stage, the underlying philosophies, the type of contracts between fund management companies/fund managers and Islamic fund investors and the entire handling of the Islamic funds. The findings of the qualitative analysis however, reveal that there is a serious lack of *Shariah* understanding even among Islamic fund managers, whilst the *Shariah* aspects in the terms and conditions of the Islamic funds' investments are not clearly explained in the prospectus. It is also apparent that fund management companies are using their Islamic funds essentially for generating higher income or to enhance their competitiveness. In addition, the fact that Islamic funds are also entrusted to non-Muslim fund managers and agents raises serious concerns about the ability of the non-Muslim fund managers and agents to promote the true objectives of the Islamic funds.

With regards to the valuation of Islamic fund performance, the unavailability of an alternative portfolio valuation model that takes into account the religious or *Shariah* aspects in Islamic funds has left this study with no other option but to use the traditional portfolio performance measurement models to evaluate the risk-adjusted return of the *Shariah*-compliant portfolio. The absence of such an alternative valuation model reflects the lack of genuine development in the Islamic fund management industry which the Islamic fund managers have attributed to an insufficient infrastructure with difficulties in measuring religious or *Shariah* variables, the limited data available on Islamic funds and *Shariah*-compliant instruments, the unavailability of an Islamic fund rating agency, lack of demand for an alternative portfolio valuation model, particularly from the Islamic fund managers themselves even though they are the natural intended users of such a model, and the perception that the existing portfolio valuation models are suitable enough to be applied on Islamic funds based on the premise that the most important variables in any portfolio performance valuation are the return and risk, even for Islamic funds.

Despite these shortcomings however, there is strong merit to support the development of an alternative portfolio valuation model for ethical or Islamic funds. This is in view of the fundamental differences between Islamic funds and conventional funds which have also been acknowledged by the Islamic fund managers themselves. For instance, Renwick (1968), Fama and MacBeth (1973), Markowitz (1991) and Sharpe (1994) have questioned the long established presumption that mean and variance are the sufficient variables for portfolio performance valuation whilst McKenzie (1977), Cullis *et al*. (1992), Anand and Cowton (1993), Mackenzie and Lewis (1999), and Beal *et al*. (2005) argued that some investors are equally motivated by other factors than just maximising monetary return. Therefore, the existing portfolio valuation models which only take into account the return and risk variables may not be able to give a true and unbiased assessment of Islamic funds since the models have clearly failed to give due recognition to the fundamental differences or restrictions of Islamic funds. This is a point which was highlighted by Mallin *et al.* (1995) when they argued that ethical funds possess some unique characteristics which render a direct comparison between the performance of the funds and stock market benchmarks somewhat misleading (see Hussein and Omran, 2005: 106). The lack of development in the Islamic finance industry occurs not only in Malaysia but also in other Muslim countries. One of the reasons is the tendency of the Muslim countries to simply copy whatever models that have been

developed by the West rather than being innovative as reported by Maurer (2001). Another reason, as highlighted by Lydenberg (2007), is because of the dominance of the modern financial theory which has been well established as compared to newly developed Islamic finance.

Furthermore, the most popular fund performance measurement methods adopted by fund managers are the tracking error technique and the peer group comparison. In the tracking error technique, the price of Islamic funds is allowed to move within a certain trading band to ensure a stable price movement. In the peer group comparison technique, fund managers monitor and compare the performance of their Islamic funds against similar classes of funds issued by other fund management companies, normally through mutual funds ratings as provided by *Lipper* or *Morningstar*. Hence, the traditional risk-adjusted return portfolio performance valuation models are arguably not widely used in Malaysia, which is just the same case as reported by Strong (2003: 479) that traditional measures are not really followed by portfolio managers in the United States. One of the reasons, as argued by some fund managers, is because general investors are largely concerned about the actual realised return rather than the risk-adjusted return. The emphasis towards realised return can be appreciated considering that unit trust or mutual fund investors themselves – who may have been well adapted to the notion of *high risk, high return* – may not be too disturbed by their fund managers taking excessive risk as long as the potential return from such extreme risk taking is high.

The finding of this study that the hypothetical portfolios show a strong mean reversion trend in their long-term performance is generally in line with the active fund management strategy adopted by the actual Islamic funds. The finding implies that the role of active fund management strategy is crucial in order to maximise portfolio return. This is particularly true in the case of Islamic funds in view that their stock and industry selection has already been constrained by the *Shariah* restrictions whilst their operating cost increases due to the additional *Shariah*-related expenses. In one case, a respondent from a fund management company admitted that she had once decided to terminate the service of one of her fund managers for reason of underperformance and the decision was paid off handsomely when the new fund manager was able to generate positive return for her Islamic fund in the succeeding year. This real-life example signifies the crucial role of engaging a competent fund manager, especially for Islamic funds.

To conclude, the study has found that the current fund management practices of Islamic funds are virtually similar to conventional funds, with exception of the *Shariah*-compliance requirements involving the stock screening process, the separation of investment accounts and the appointment of *Shariah* scholars. With respect to the Islamic funds' performance valuation, the popular techniques used by the existing Islamic fund managers are the tracking error and the peer group comparison methods whilst the traditional portfolio performance valuation models are not widely used due to the apparent emphasis towards realised return rather than the risk-adjusted return of the fund by general investors. The study also found that the active fund management strategy is arguably the best approach for Islamic funds in Malaysia.

9.3 CONCLUDING REMARKS

This chapter has discussed the findings from the three analysis methods used in the *methodological triangulation technique* of this study namely literature review analysis, the quantitative analysis, and the qualitative analysis. The literature review analysis involved the analysis of past studies related to the modern portfolio theory, performance of ethical and Islamic funds as well as actual data of Islamic fund industry in Malaysia. The quantitative analysis involved the analysis of return and risk characteristics and performance of Islamic funds based on hypothetical portfolios comprising entirely of Malaysian listed equities. The qualitative analysis attempts to provide further insight into the operation and performance of actual Islamic funds based on face-to-face interviews with Islamic fund managers in Malaysia. The discussion revolved around the four problem statements of this study which are related to the general return and risk characteristics of Islamic funds, the performance trend of Islamic funds, the *Shariah* impact on Islamic funds' performance, and Islamic funds' operation and performance valuation. In view that the results of the three sources of analysis methods are not contradicting but complementing each other's findings, the study was able to derive a comprehensive conclusion pertaining to Islamic funds' characteristics, operation and performance in Malaysia. It should be noted here that the discussion of the findings from the quantitative and qualitative analysis in this chapter is primarily related to the comparison between the *Shariah*-compliant portfolio (SAP) and conventional portfolio (CP). Since no known *haram* or sin fund is actually available in Malaysia, the NSAP

cannot be used as proxy to any existing funds, hence a direct comparison between SAP and NSAP may not be meaningful to make generalisation of the real scenario. Notwithstanding however, the results can still be used to support the observed superior performance by conventional funds since the funds also invest in non-permissible (*haram*) stocks. The following chapter provides the final conclusion of the study and recommendation for possible future study.

Chapter 10

CONCLUSION

10.1 REFLECTIONS ON THE STUDY

This study is meant to provide a critical review of the characteristics and performance of Islamic funds in Malaysia, and it was conceived on the back of a spectacular growth of the Islamic fund industry amid the growing interest towards Islamic unit trust or mutual fund investment in the country. The study aims to address the outstanding issues relating to the performance of Islamic funds and to contribute positively to the development of the Islamic fund industry by exploring the means to further enhance the assessment methods of Islamic funds. The primary objectives of the study are to identify the return and risk characteristics of Islamic funds and to examine the Islamic funds' performance and valuation methods.

The main motivation of this study is the observation that Islamic funds in general have, unfortunately, largely underperformed conventional funds. Since the subject interest of this study is the unit trust or mutual fund, a popular type of investment instrument in Malaysia which invests in various assets including stocks, fixed income securities, cash and other assets through an investment fund pooled from a large number of individual investors and managed by professional fund managers, the performance of the fund therefore, is subjected to various macro and micro economic factors such as the general economic condition, political stability, changes in regulatory framework, the stock market trend and the overall industry performance. While the factors just mentioned represent the systematic risk of the mutual fund, the two most crucial factors which could affect the fund's performance substantially are the investment skills of the fund managers and the quality of the individual stocks that make up the fund's investment portfolio. In this regards, the securities selection process is crucial especially for Islamic funds which have already been constrained by their investment mandate. On the other hand, the traditional portfolio performance measurement models arguably may not be able to give fair valuation to Islamic funds since the standard portfolio valuation models

do not take into account the fundamental differences or the constraints faced by Islamic funds, hence the results obtained from the models may be biased against Islamic funds. Therefore, the study is interested to analyse the return and risk characteristics of Islamic funds thoroughly in an attempt to unravel the causes of Islamic funds' underperformance.

The significance of this study is attributed to the lack of comprehensive research as well as the inconclusive results and contradictory findings of earlier studies on this topic. The main shortcoming of the past studies analysing Islamic fund performance is the derivation of their findings from research methodology that uses a sample of actual Islamic funds available in the market. Since past studies analysing Islamic fund performance were based solely on secondary data in the forms of the unit price or NAV of the actual Islamic funds, the results may have been affected by the prevailing market condition at the time that the studies were undertaken and the appropriateness of the empirical models used in the studies. Moreover, since past studies were merely based on secondary data and did not involve the participation of industry practitioners, the scope of the studies may have been limited by their failure to understand the actual operation and constraints of Islamic funds, information regarding which can only be obtained through the involvement of industry practitioners. Being at the forefront of the Islamic fund industry, input from Islamic fund managers, in particular, is highly valuable for a thorough understanding of the issue. To overcome the various shortcomings of the past studies and to ensure the thoroughness of the analysis, this study employed both quantitative and qualitative analytical approaches and utilised both secondary and primary data. It is worth mentioning here that this study is the first known attempt that utilises the *methodological triangulation technique* in the analysis of Islamic funds' characteristics and performance.

It is rather obvious that investment mandate of Islamic funds has exposed the funds to several return-impacting *Shariah*-compliance requirements which are peculiar only to Islamic funds and do not affect their conventional counterparts. On the other hand, the traditional portfolio performance measurement models have not been appropriately adjusted to reflect the underlying philosophy of the Islamic fund creation or the *Shariah* constraints affecting Islamic funds, thus rendering the traditional models unable to give a true or unbiased valuation of Islamic funds' performance. Therefore, this study is important since it investigates the issue in greater detail to determine whether there is an

urgent need to develop an alternative portfolio performance valuation model which will give a fair valuation to Islamic funds. However, although the study has successfully identified the additional variables which are supposed to be taken into account for a proper valuation of Islamic fund performance, numerous limitations related to insufficient infrastructure, lack of data on *Shariah*-compliant instruments and indices, the considerably low interest towards the alternative valuation model especially by the Islamic fund managers themselves, and the difficulty in quantifying religious or *Shariah*-related variables have not permitted the new alternative model to be developed within the short duration of this study.

Nevertheless, the significance of the study can be appreciated academically through its contribution towards the expansion of knowledge and enhancing the literature on topic related to Islamic fund management. This certainly augurs well for the Islamic fund industry in view of the shortage of extensive research in this area despite the impressive growth of the industry. Though the importance of having an alternative portfolio valuation model specifically for Islamic funds is not widely realised at the moment, the need for such a model is likely to arise in the future when the size of the Islamic fund industry becomes more significant proportionately. Therefore, the findings of this study can be used as a platform for future studies related to Islamic fund performance. For now, any effort to develop an alternative portfolio performance valuation model for Islamic funds is likely to be spearheaded by the academic community instead of industry practitioners.

The scope of the study was divided into four main areas, namely the analysis of return and risk characteristics of Islamic funds; analysis of the performance trend of Islamic funds; analysis of the impact of *Shariah*-compliance requirements on Islamic funds' performance; and, analysis of the handling of Islamic funds by fund management companies. To ensure that the study was thorough in its analysis, the study employed the *methodological triangulation technique* which utilises both the quantitative and qualitative analyses. The quantitative analysis method is used to analyse and make inferences from secondary data whilst the qualitative analysis method is used to analyse and make inferences from primary data obtained through face-to-face interviews with Islamic fund/investment managers. Hence, this study is explorative in nature as it attempts to investigate the issue of Islamic fund performance valuation by identifying the

return and risk characteristics of Islamic funds from both secondary and primary sources. The analysis of the return and risk characteristics of Islamic funds has helped in determining the performance behaviour of the funds whilst the inputs obtained through feedbacks from Islamic fund managers has revealed the actual fund management practice, the *Shariah* effects on Islamic fund performance, and the current fund valuation techniques adopted by Islamic fund managers.

The findings of the study are deemed as both intriguing and thought provoking. The study found that the existing Islamic funds have been created largely by mimicking conventional funds, hence there are large similarities between Islamic funds and conventional funds in terms of their structure and operations. In fact, the economic motive, rather than the religious-related motive, is arguably the main reason behind Islamic funds offering by fund management companies. The main factor distinguishing Islamic funds from conventional funds is the *Shariah*-compliance-related activities, particularly with regards to stock selection and *Shariah*-compliance supervision. Islamic funds are generally characterised by lower return and high volatility, have limited numbers of profitable stocks or industries whose returns are strongly and positively correlated, have a smaller fund size and low fund subscription rate, and, are mainly invested in large-capitalised or heavyweight stocks that are involved in defensive industries. Interestingly, the study found that Islamic funds which invest mainly in large-capitalised stocks could outperform both conventional funds and the market index. Furthermore, the study found that the analysis of Islamic fund performance is sensitive to the benchmark used for performance comparison. This is highlighted by the analysis using the traditional portfolio valuation models which are based on the risk-adjusted return that shows Islamic funds are able to outperform conventional funds if *Shariah*-compliant instruments are used as the performance benchmarks.

Despite the overwhelming evidence of Islamic funds' underperformance, the empirical results indicate that the difference between return of Islamic funds and return of conventional funds are not robust statistically. Therefore, the results should be inferred cautiously and should not be construed as giving conclusive evidence that Islamic funds are inferior to conventional funds, or vice versa. In addition, to put the issue in the right perspective, the evidence of Islamic funds' underperformance does not in any way represent a disadvantage of Islamic funds considering that the underlying philosophy of

the funds actually goes beyond the maximising of monetary return, as in the case of conventional funds, but to attain other non-pecuniary motives including the fulfilment of religious obligation or adherence to *Shariah* principles while making an investment. Based on this perspective, outperforming conventional funds may not be the main challenge for Islamic funds, but equally the funds are expected to generate a satisfactory level of return, preferably one which is not substantially lower than the return of conventional funds, in order for Islamic funds to remain competitive and viable to general investors.

With respect to the *Shariah* implementation, the study found that all the existing Islamic funds are fully *Shariah*-compliant by virtue of their approval by the Securities Commission (SC). However, the study noticed that there is a huge gap in terms of *Shariah* understanding and adoption of *Shariah* principles in the creation of the Islamic funds. Specifically, the structure of the existing Islamic funds have not been explicitly tailored to promote the true Islamic teachings or to achieve the *Shariah* objectives (*maqasid al-Shariah*). Instead, the existing Islamic funds closely resembled their conventional counterparts in their structure and handling, thus resulting in the general perception that Islamic funds are not significantly different to conventional funds or that Islamic funds merely represent another type of financial product from the issuing fund management companies without due recognition to their religious significance. The perception is mainly stimulated by the Islamic funds' mimicking of conventional funds, the current handling or treatment of Islamic funds by fund management companies, and the clear separation of role between fund management companies and their *Shariah* advisory board. The separation of role effectively relieves fund management companies from the necessity to develop their own *Shariah* experts or to promote the understanding and adoption of *Shariah* principles among key management personnel, fund managers and unit trust or mutual fund agents.

The study found that *Shariah*-compliance requirements affects Islamic fund performance particularly in two instances: 1) it increases the operating cost of Islamic fund management companies by creating additional *Shariah*-related expenses; and, 2) it introduces additional risk namely the *Shariah* non-compliance risk to Islamic funds. Since both the *Shariah*-related costs and *Shariah* risk are unique to Islamic funds and not affecting conventional funds, the former would have to generate a significantly higher

return in order to outperform the latter if their performance is compared directly. This explains why it is difficult for Islamic funds to outperform conventional funds based on realised return. Hence, it appears that the adherence to *Shariah* requirements or branding a fund as Islamic does not give any significant economic advantage, apart from attracting pious Muslim or ethically-concerned investors.

With regards to the Islamic funds' performance valuation, the study found that the traditional models which measure fund performance based on risk-adjusted return are not widely used by the participating fund managers. Instead, the more popular methods of fund performance valuation used by the fund managers are the peer group comparison and the tracking error techniques. The rather limited interest towards the standard portfolio valuation models is due to investors general emphasis on the actual realised return rather than risk-adjusted return. In addition to the lack of demand from the fund managers themselves, any effort to develop an alternative fund performance measurement model may also be hampered by insufficient infrastructure such as the limited data on *Shariah*-compliant instruments or indices, the absence of an Islamic fund rating agency, and the difficulty in quantifying or measuring religious or *Shariah*-related variables. Despite these shortcomings however, the participating fund managers have generally agreed that Islamic funds are essentially different from conventional funds, hence a direct comparison between the two funds is rather inappropriate. Therefore, the reservation shown by the Islamic fund managers should not be construed as an outright rejection to the idea of developing an alternative portfolio valuation model for Islamic funds. On the contrary, what the fund managers have merely suggested is that such model is not urgently needed *at the moment* in view of the significantly small current market size of the Islamic fund industry and the limited number of *Shariah*-compliant fund products and financial instruments as well as industry players. In fact, some fund managers have supported the idea since the alternative portfolio valuation model, if materialised, will certainly benefit the Islamic fund industry significantly by providing the industry with a performance measurement model that will give a fair valuation to Islamic funds. However, unless the shortcomings are addressed satisfactorily and there is a significant shift in the way investors perceive the actual return, or the manner in which the return is calculated by taking into account other non-pecuniary variables, it would be almost impossible to break the dominance of the conventional portfolio theory.

The study also found that the active fund management strategy is arguably the best approach for Islamic funds in Malaysia as compared to the simple buy-and-hold or passive fund management strategy. This is in view of the high volatility of the Malaysian stock market which requires fund managers to capitalise on every opportunity that arises from price fluctuations or embark into a defensive position to protect their funds' investment value in the event the stock market turns bearish. Adopting the simple buy-and-hold or passive strategy especially for a considerably long period of time may not be a wise strategy at all as shown by the historical performance of the share prices and the benchmark index, reflected in this study through the strong mean reversion trend in the long-term return of the hypothetical portfolios and the KLCI. The active fund management strategy is even more crucial for Islamic funds which have been constrained by their investment mandate. Notwithstanding however, the success of the strategy depends largely on the superior investment skills of the Islamic fund managers. Though the study is designed to analyse the characteristics and performance of Islamic funds thoroughly, various constraints encountered during the course of this study in terms of research duration, funding, software and technical knowhow has inevitably resulted in several limitations of this study which, if addressed, would provide stronger foundations for further study. The limitations and suggestions for future study are discussed in the following two sections.

10.2 LIMITATIONS OF THE STUDY

This section highlights the limitations of the study which are as follows:

10.2.1 Limited Scope of the Analysis

The scope of the study has mainly focussed on the general return and risk characteristics and performance valuation of Islamic funds. Hence, the data and the sample selection for both the quantitative analysis and the qualitative analysis have been specifically tailored towards achieving the research objectives. Consequently, the study has not directly looked into the behavioural aspects of Islamic fund investors that would require participation from the general investors; or examined the portfolio decision making process in the fund management companies that would require participation from key

management personnel apart from the fund/investment managers; or investigated the marketing and promotion activities of Islamic funds that would require participation from unit trust agents; or scrutinised the regulatory supervision of the Islamic fund industry that would require participation from the authorities such as the SC or members of the *Shariah* advisory board. Nevertheless, the study *has* taken into consideration the possible contributions from all parties involved in the operation and performance of Islamic funds. In addition, since the study is conducted in Malaysia, the findings reflect Malaysian experiences which may not necessarily be similar with other countries' experiences due to the differences in the stock market environment, regulatory structure, *Shariah* rulings and fund management practice.

10.2.2 Limited Type of Investment Asset

The hypothetical portfolios used in the quantitative analysis have only a single type of asset, namely Malaysian listed equities. Hence, the performance of the hypothetical portfolios merely reflects the kind of return that a unit trust or mutual fund may achieve if it invests entirely in shares of companies listed on the Malaysian stock market. In contrast, an actual fund would typically invest in several types of securities such as stocks, fixed income securities, money market instruments, cash and fixed assets in accordance with the fund's asset allocation strategy. Since the hypothetical portfolios only have a single type of asset, their returns do not reflect the more dynamic performance of a multi-assets portfolio.

10.2.3 Limited Data Available on *Shariah*-Compliant Instruments

The findings derived based on *Shariah*-compliant index or assets may be constrained by the limited data available for these instruments. For instance, the FBM Emas *Shariah* Index used to represent the *Shariah* index in this study was launched in 2008 with its data backdated to 1999. Hence, the findings were solely based on the performance of the 10-year period whilst analysis based on the different sub-periods for the purpose of making a parallel comparison with the portfolios' performance using conventional instruments cannot be made.

10.2.4 Limited Sample of Respondents

Though the sample of seven respondents which comprises about one-third of the total number of fund management companies offering Islamic funds in Malaysia is deemed sufficient, all the participating fund managers are Muslims who may already have some basic knowledge about the *Shariah*. However, since the number of non-Muslim dominated fund management companies offering Islamic funds based on the Islamic window concept and the number of non-Muslim fund managers are greater than the number of Muslim dominated fund management companies/Muslim fund managers, it will be interesting to obtain the non-Muslim fund managers' perception towards Islamic funds. It has to be noted here that every effort has been made to obtain the participation from non-Muslim fund managers but the unwillingness of the non-Muslim fund managers to take part in the interview for various reasons as well as several other constraints related to the limited time period and logistic problems during the fieldwork have hampered efforts to obtain the participation of the non-Muslim fund managers. Furthermore, the study has purposely selected only Islamic fund managers as respondents to suit the scope of the study and has not obtained participation from conventional fund managers, key management personnel, unit trust agents, investors or regulators of the Islamic fund industry.

10.3 SUGGESTIONS FOR FUTURE RESEARCH

Having identified the limitations of the study, the following are the recommendations for future study related to Islamic funds:

10.3.1 Expanding the Scope of Analysis and Sample of Respondents

Future research on Islamic funds' operation and performance may be extended into the study of behaviour of Islamic fund investors to determine their actual intention in subscribing into Islamic funds and to examine their trading strategy when investing in the funds. Future studies may also look into the role and strategy of fund management companies in educating Islamic funds investors particularly in creating awareness towards the noble intention and the true nature of Islamic funds as an investment instrument in

which the objectives go beyond the mere pursuit of monetary gains. This includes studies on how to improve the quality of *Shariah* information dissemination through mediums such as the Islamic fund prospectus and proper training for fund managers and mutual fund agents. Other interesting areas for future studies are the analysis of the components of actual Islamic funds' portfolio or analysis of the investment decision making process particularly with regards to securities selection and the roles of *Shariah* advisory boards as well as the analysis of marketing strategy used by unit trust or mutual fund agents to convince potential investors to subscribe into Islamic funds. Future studies may also involve participation from non-Muslim fund managers, key personnel of fund management companies, *Shariah* scholars and regulators of Islamic fund industry to obtain further insight into the operation of Islamic funds and to examine the extent to which *Shariah*-compliant funds have fully upheld the true spirit of Islamic teachings or achieving the *Shariah* objectives.

10.3.2 Quantifying the *Shariah*-Related Variables

One major obstacle to any research pertaining to Islamic finance is the inability to quantify religious or *Shariah*-related variables. While the conventional economic theory attributes the individual's satisfaction (expected utility) to attaining maximum monetary gains against a certain level of risk taking, Islamic finance theory has yet to develop its own definition of "satisfaction" that incorporates both conventional utility and religious values. At present, there is no specific formula to measure religiousness or piousness level or to reward an individual for their virtuous acts. In relation to fund performance, there is no formula yet to calculate the incentive for avoiding high-yielding non-*Shariah*-approved stocks so Islamic funds' return can be adjusted to reflect the inability of the funds to invest in sin stocks, of which, their conventional counterparts are free to invest at will. There is also no formula yet to compensate for additional *Shariah* costs incurred so the return of Islamic funds can be fairly evaluated against conventional funds which are not subject to such additional expenses. Notwithstanding however, although the idea to quantify religious or *Shariah* related variables seems to be far fetched, the ability to measure the quality of the religious attributes, if successful, will certainly open an entirely new horizon of Islamic finance theory.

10.3.3 The Applied *Shariah* Rating Assessment (ASRA) Model

Two interesting findings of the qualitative analysis are: 1) economic motives, rather than religious motives, are actually the main factor behind Islamic funds offering by fund management companies; and, 2) there is an apparent lack of appreciation towards Islamic teachings or *Shariah* objectives in the creation and handling of Islamic funds. The findings are particularly true for fund management companies which offer Islamic funds under the Islamic window concept. These raise a serious concern pertaining to the "purity" of the existing Islamic funds available in the market, despite being certified as *Shariah*-compliant by the SC. Since branding a fund as Islamic will inevitably associate the fund with Islamic virtues, it is logical to expect that the so-called Islamic fund is created with some underlying religious philosophies so it can assist in promoting the Islamic values or attaining the *Shariah* objectives while enabling pious Muslim investors to participate in economic activities through unit trust or mutual fund investment that adheres to Islamic principles. It is also logical to expect that the Islamic fund will be handled in accordance to Islamic teachings entirely so the purity of the fund can be ensured.

With this in mind and based on the feedback from Islamic fund managers, it is suggested that future study looks into the actual handling of Islamic funds thoroughly and measures the degree of the adoption of Islamic principles in the existing Islamic funds. Hence, it is proposed that a study, which can tentatively be called the Applied *Shariah* Rating Assessment (ASRA) Model, is undertaken in future. The model is envisioned amid concern of the limited understanding especially among Islamic fund managers (both Muslims and non-Muslims) and fund management companies on the underlying principles of Islamic funds and how *Shariah* principles should be implemented in the process of creating, managing and marketing of Islamic funds. It is apparent from the Islamic fund prospectuses that the current understanding of what constitutes an Islamic fund is merely confined to stock screening or investment in *halal*-approved stocks and having a *Shariah* advisory board as a source of reference and supervision of *Shariah*-related matters. Further investigation has also revealed that Islamic funds are mostly created in response to market demand and administered by both Muslims and non-Muslims alike. Therefore, the ASRA model is designed to measure the extent to which fund management companies really embrace Islamic principles in the operation of their

Islamic funds. The ASRA model will have three main objectives: 1) to determine how comprehensively the fund management companies embrace Islamic principles in the operations of their Islamic funds; 2) to provide a rating based on the level of *Shariah*-compliance or adoption of Islamic principles in the operation of Islamic funds; and, 3) to distinguish between a mere "*Shariah*-compliant fund" with a true "Islamic-based fund". The research terms of reference, scope, methodology, tools or instruments are among the issues that need to be addressed in the future.

10.4 CLOSING REMARKS

This study is undertaken with a single purpose namely to contribute positively to the development of the Islamic fund management industry by providing a comprehensive analysis of the characteristics and performance of Islamic funds. It is hoped that more research in this area will be carried out in the future, especially research that takes into account the recommendations put forward by this study.

EPILOGUE

The clock turns to 11:00 am just as SAP, a 35-year old executive, enters into a conventional bank wanting to cash-in his dividend voucher. Once inside, he walks towards the ticketing machine and pulls a ticket out. It's ticket No. 123. The bank is pretty quiet that morning unlike the busy and chaotic situation that normally prevails at this hour. "Emm! It's my lucky day, indeed," he says to himself quietly as he looks upon the display screen showing No. 119, "three more customers, then it'll be my turn." He moves towards an unoccupied chair next to a customer service desk.

He counts eight other customers inside the bank while four counters are open: three are manned by female clerks of which two are non-Muslim Chinese and the other is a Muslim Malay, and one counter is handled by a non-Muslim Indian male clerk.

At the customer service desk next to him, a non-Muslim Chinese lady officer is explaining about the bank's financial products to a Muslim Malay lady wearing a headscarf. The lady listens attentively to the officer while holding an Islamic fund prospectus offered by the bank in her hand. Another Muslim Malay male officer is at the back of the counters, apparently verifying forms and passbooks handed to him by one of the bank clerks. "A typical multi-ethnic Malaysian society working in complete harmony", he says to himself proudly.

While he is observing this, another customer enters the bank and comes towards him, taking the chair next to him. They are about the same age and he is holding an envelope that looks very familiar to him.

"This guy must be here to cash-in his dividend, as well", SAP speculates.

"How well did your fund perform?" the man asks.

Surprised by the sudden question by CP, SAP replies spontaneously, "Not that good, unfortunately, I'm only getting RM29.20 from my RM1000 investment. It's quite a modest return I would say. How's yours?"

"Lucky me, my fund did quite well this time," says CP, smiling, "I got RM49.96 for my RM1000 investment this year", he continues.

There is an announcement calling No. 120 to Counter 4. A middle-aged man rises from his chair and walks slowly to Counter 4 to be attended by a Malay lady teller.

"My number is 125. What's yours?" asks CP.

"Mine is 123", SAP answers, briefly.

"Just wondering, what fund you are investing in?" asks CP, "it looks like you're getting ***below*** the FD rate to me." He points to the display screen showing the FD rates offered by the bank. The rate for 12-month maturity period is 3.07 per cent.

"It's below the FD rate, alright," replies SAP, smiling, "but it does not really concern me much, because I'm investing in Islamic fund."

"Oh! So, it's a religious fund, then. I presume you wanted to invest in a fund that deals entirely in *halal* stocks. I can understand that, but it seems to me that your fund is ***not*** much different from my fund," CP argues. "Why invest in this company and not in a fully-fledged Islamic fund management company? How ***sure*** are you that the fund is entirely managed the Islamic way?" he asks enthusiastically.

"I don't, actually. I just ***trust*** the fund management company. Their guarantee is good enough for me. By the way, their Islamic fund is giving the highest return as compared to any Islamic funds including those offered by the fully-fledged Islamic fund management company. So, it's the fund's ***return*** that attracted me the most."

"Even if the return is lower than the FD?" CP asks anxiously, "Are you really happy with the return?" There is an announcement calling for No. 121 to Counter No. 1.

SAP takes a quick look at his number again, then replies, "Well, if based on the ***risk-adjusted return***, my investment is not that bad, actually since it is the best fund in its class and even outperformed some conventional funds."

"Oh! I see. I ***don't*** really know what the risk-adjusted return means, but I do know the ***actual*** return is more important to me. I get more money from my dividend than you, that's for sure, regardless of whether my fund is ranked below your fund."

"You might be right, in your own ***perspective***, of course", SAP replies. "But, I think there is more than just the fund's return to this investment. What matters to me the most is that I'm investing in a *halal* fund. That's more important."

There is an announcement calling No. 123 to Counter No.3. "Aha! That's my number being called. I think I should go now. It's nice to have a chat with you, though", he continues.

SAP bids CP a farewell then walks to the counter which is manned by a non-Muslim Chinese female teller. CP gazes at him in amazement while trying to rationalise why SAP would invest in a fund that gives lower return to the FDs.

"Ultimately, it's an individual's ***choice*** and ***preference***, of course", he concludes. CP continues waiting for his turn while his mind is wondering how he will spend the money that he's getting from the dividend later.

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APPENDIX I

LIST OF *SHARIAH*-COMPLIANT SECURITIES BY THE *SHARIAH* ADVISORY COUNCIL OF THE SECURITIES COMMISSION (as at 28th of November 2008)

LISTING BOARD: MAIN BOARD

SECTOR: CONSUMER PRODUCTS

No.	Code	Name of Company	No.	Code	Name of Company
1.	7120	Acoustech Bhd	41.	2887	Lion Diversified Holdings Bhd
2.	2658	Ajinomoto (M) Bhd	42.	7126	London Biscuits Bhd
3.	7090	Apex Healthcare Bhd	43.	3662	Malayan Flour Mills Bhd
4.	6432	Apollo Food Holdings Bhd	44.	5282	Mamee-Double Decker (M) Bhd
5.	7129	Asia File Corporation Bhd	45.	9733	Maxbiz Corporation Bhd
6.	5039	Baneng Holdings Bhd	46.	5886	Mintye Industries Bhd
7.	9288	Bonia Corporation Bhd	47.	3921	MWE Holdings Bhd
8.	2828	C.I. Holdings Bhd	48.	4707	Nestle (Malaysia) Bhd
9.	7174	CAB Cakaran Corporation Bhd	49.	7060	New Hoong Fatt Holdings Bhd
10.	7148	CCM Duopharma Biotech Bhd	50.	5017	Nikko Electronics Bhd
11.	7202	Classic Scenic Bhd	51.	5066	NTPM Holdings Bhd
12.	7205	Cocoaland Holdings Bhd	52.	7107	Oriental Food Ind. Hldgs. Bhd
13.	2925	Cycle & Carriage Bintang Bhd	53.	4006	Oriental Holdings Bhd
14.	7119	DeGem Bhd	54.	7052	Padini Holdings Bhd
15.	2976	DNP Holdings Bhd	55.	3719	Panasonic Manufacturing M'sia B
16.	7198	DPS Resources Bhd	56.	6068	PCCS Group Bhd
17.	3026	Dutch Lady Milk Ind. (Malaya) Bd	57.	5231	Pelikan International Corp. Bhd
18.	5074	DXN Holdings Bhd	58.	7088	Poh Huat Resources Holdings Bhd
19.	5091	Ekowood International Bhd	59.	5080	Poh Kong Holdings Bhd
20.	7125	Emivest Bhd	60.	4065	PPB Group Bhd
21.	7149	Eng Kah Corporation Bhd	61.	2895	Putera Capital Bhd
22.	9172	Formosa Prosonic Industries Bhd	62.	7134	PW Consolidated Bhd
23.	5649	Golden Pharos Bhd	63.	7084	QL Resources Bhd
24.	5102	Guan Chong Bhd	64.	7184	Sequoia Holdings Bhd
25.	3301	Hong Leong Industries Bhd	65.	7180	Sern Kou Resources Bhd
26.	7213	Hovid Bhd	66.	7136	Silver Bird Group Bhd
27.	5024	Hup Seng Industries Bhd	67.	4316	Sin Heng Chan (Malaya) Bhd
28.	5058	Hytex Integrated Bhd	68.	4405	Tan Chong Motor Holdings Bhd
29.	5107	IQ Group Holdings Bhd	69.	7200	Tek Seng Holdings Bhd
30.	7152	Jaycorp Bhd	70.	7230	Tomei Consolidated Bhd
31.	8931	Jerasia Capital Bhd	71.	4421	Tradewinds (M) Bhd
32.	8532	John Master Industries Bhd	72.	4588	UMW Holdings Bhd
33.	7182	KBB Resources Bhd	73.	7757	UPA Corporation Bhd
34.	7030	Kenmark Industrial Co. (M) Bhd	74.	7121	Xian Leng Holdings Bhd
35.	6203	Khee San Bhd	75.	7178	Y.S.P. Southeast Asia Hlding Bhd
36.	7151	Kimble Corporation Bhd	76.	5584	Yee Lee Corporation Bhd
37.	0002	Kotra Industries Bhd	77.	4642	Yeo Hiap Seng (M) Bhd
38.	7006	Latitude Tree Holdings Bhd	78.	5131	Zhulian Corporation Bhd
39.	4839	Leong Hup Holdings Bhd			
40.	7089	Lii Hen Industries Bhd			

SECTOR: INDUSTRIAL PRODUCTS

No.	Code	Name of Company	No.	Code	Name of Company
1.	7191	Adventa Bhd	46.	8443	HIL Industries Bhd
2.	7609	Ajiya Bhd	47.	9644	Hirotako Holdings Bhd
3.	2674	Aluminium Com. of Malaysia Bhd	48.	9601	Ho Wah Genting Bhd
4.	2682	Amalgamated Industrial Steel Bhd	49.	3328	Hume Industries (Malaysia) Bhd
5.	4758	Ancom Bhd	50.	6829	Industrial Concrete Products Bhd
6.	6556	Ann Joo Resources Bhd	51.	7112	Ingress Corporation Bhd
7.	5568	APB Resources Bhd	52.	2127	Integrated Rubber Corp. Bhd
8.	5479	APL Industries Bhd	53.	7223	Jadi Imaging Holdings Bhd
9.	5015	APM Automotive Holdings Bhd	54.	2747	Java Incorporated Bhd
10.	7162	Astino Bhd	55.	4383	Jaya Tiasa Holdings Bhd
11.	7187	Boon Koon Group Bhd	56.	7167	Johore Tin Bhd
12.	8133	Boustead Heavy Ind Bhd	57.	3476	Keck Seng (M) Bhd
13.	5100	BP Plastics Holding Bhd	58.	6211	Kia Lim Bhd
14.	7135	BSA International Bhd	59.	3522	Kian Joo Can Factory Bhd
15.	5105	Can-One Bhd	60.	5371	Kim Hin Industry Bhd
16.	7076	CB Industrial Product Hldg. Bhd	61.	5060	Kinsteel Bhd
17.	7171	Century Bond Bhd	62.	9466	KKB Engineering Bhd
18.	2879	Chemical Com. of Malaysia Bhd	63.	7164	KNM Group Bhd
19.	5007	Chin Well Holdings Bhd	64.	7153	Kossan Rubber Industries Bhd
20.	5797	Choo Bee Metal Industries Bhd	65.	8362	KYM Holdings Bhd
21.	5071	Coastal Contracts Bhd	66.	3794	Lafarge Malayan Cement Bhd
22.	5094	CSC Steel Holdings Bhd	67.	9326	LB Aluminium Bhd
23.	5082	Cymao Holdings Bhd	68.	5092	LCTH Corporation Bhd
24.	8125	Daibochi Plastic & Pack. Ind. Bhd	69.	9881	Leader Steel Holdings Bhd
25.	6505	Delloyd Ventures Bhd	70.	4529	Leader Universal Holdings Bhd
26.	5086	DK Leather Corporation Bhd	71.	8745	Leweko Resources Bhd
27.	5835	Dolomite Corporation Bhd	72.	9504	Linear Corporation Bhd
28.	7169	Dominant Enterprise Bhd	73.	2011	Lingui Development Bhd
29.	7233	Dufu Technology Bhd	74.	3581	Lion Corporation Bhd
30.	9016	Eksons Corporation Bhd	75.	4235	Lion Industries Corporation Bhd
31.	7166	Englotechs Holding Bhd	76.	5068	Luster Industries Bhd
32.	7217	Eonmetall Group Bhd	77.	7087	Magni-Tech Industries Bhd
33.	7773	EP Manufacturing Bhd	78.	3743	Malaysia Aica Bhd
34.	3042	Esso Malaysia Bhd	79.	5916	Malaysia Smelting Corp. Bhd
35.	5101	Evergreen Fibreboard Bhd	80.	5098	Malaysia Steel Works (KL) Bhd
36.	7552	Evermaster Group Bhd	81.	7075	Malaysian Ae Models Hldgs. Bhd
37.	2984	FACB Industries Incorporated Bhd	82.	9202	Maxtral Industry Bhd
38.	7229	Favelle Favco Bhd	83.	3778	Melewar Industrial Group Bhd
39.	2755	FCW Holdings Bhd	84.	5223	Mentiga Corporation Bhd
40.	3611	Goh Ban Huat Bhd	85.	6149	Metrod (M) Bhd
41.	2135	Gopeng Bhd	86.	5001	Mieco Chipboard Bhd
42.	3247	GUH Holdings Bhd	87.	5576	Minho (M) Bhd
43.	5168	Hartalega Holdings Bhd	88.	3883	Muda Holdings Bhd
44.	5095	Heveaboard Bhd	89.	5087	Mycron Steel Bhd
45.	5072	Hiap Teck Venture Bhd	90.	5000	Narra Industries Bhd

SECTOR: INDUSTRIAL PRODUCTS

No.	Code	Name of Company	No.	Code	Name of Company
91.	5025	NWP Holdings Bhd	121.	5665	Southern Steel Bhd
92.	4944	Nylex (M) Bhd	122.	6904	Subur Tiasa Holdings Bhd
93.	7109	Octagon Consolidated Bhd	123.	7207	Success Transformer Corp. Bhd
94.	7140	OKA Corporation Bhd	124.	7106	Supermax Corporation Bhd
95.	5065	Ornapaper Bhd	125.	7131	Supportive Intl. Hldgs. Bhd
96.	7225	P.A Resources Bhd	126.	5012	Ta Ann Holdings Bhd
97.	7095	P.I.E. Industrial Bhd	127.	4448	Tasek Corporation Bhd
98.	4081	Pan Malaysia Corporation Bhd	128.	6378	Tekala Corporation Bhd
99.	5022	Paos Holdings Bhd	129.	8257	Tenggara Oil Bhd
100.	5436	Per Sadur Timah(M) Perstima Bhd	130.	7034	Thong Guan Industries Bhd
101.	5146	Perwaja Holdings Bhd	131.	0012	Three-A Resources Bhd
102.	6033	Petronas Gas Bhd	132.	5103	Titan Chemical Corp. Bhd
103.	6637	PNE PCB Bhd	133.	5010	Tong Her Resources Bhd
104.	7175	Poly Tower Ventures Bhd	134.	7113	Top Glove Corporation Bhd
105.	8869	Press Metal Bhd	135.	4537	UAC Bhd
106.	9873	Prestar Resources Bhd	136.	7100	Uchi Technologies Bhd
107.	7123	Priceworth Wood Products Bhd	137.	7133	United U-Li Corporation Bhd
108.	7803	Rubberex Corporation (M) Bhd	138.	6963	V.S. Industry Bhd
109.	9113	Sanbumi Holdings Bhd	139.	4995	Versatile Creative Bhd
110.	7811	Sapura Industrial Bhd	140.	5142	Wah Seong Corporation Bhd
111.	4731	Scientex Bhd	141.	7111	Weida (M) Bhd
112.	7158	Scomi Group Bhd	142.	7231	Wellcall Holdings Bhd
113.	4286	Seal Incorporated Bhd	143.	5009	White Horse Bhd
114.	5145	Sealink International Bhd	144.	4022	Wijaya Baru Global Bhd
115.	4324	Shell Refining Co. (F.O.M.) Bhd	145.	4243	WTK Holdings Bhd
116.	2739	Sino Hua-An International Bhd	146.	7463	Ye Chiu Metal Smelting Bhd
117.	6262	Sinora Industries (M) Bhd	147.	5048	Yi-Lai Bhd
118.	4359	Sitt Tatt Bhd	148.	7014	YLI Holdings Bhd
119.	7155	SKP Resources Bhd	149.	8737	YTL Cement Bhd
120.	5134	Southern Acids (M) Bhd	150.	7020	Yung Kong Galvanising Ind. Bhd

SECTOR: CONSTRUCTION

No.	Code	Name of Company	No.	Code	Name of Company
1.	7078	Ahmad Zaki Resources Bhd	14.	4723	Jaks Resources Bhd
2.	5932	Bina Puri Holdings Bhd	15.	7323	Ken Holdings Bhd
3.	8761	Brem Holdings Bhd	16.	7706	Loh & Loh Corporation Bhd
4.	8591	Crest Builder Holdings Bhd	17.	1651	Malaysian Resources Corp. Bhd
5.	7528	DKLS Industries Bhd	18.	5129	Melati Ehsan Holdings Bhd
6.	8877	Ekovest Bhd	19.	5006	Merge Energy Bhd
7.	9261	Gadang Holdings Bhd	20.	9571	Mitrajaya Holdings Bhd
8.	5398	Gamuda Bhd	21.	5924	MTD ACPI Engineering Bhd
9.	5169	Ho Hup Construction Co. Bhd	22.	5085	Mudajaya Group Bhd
10.	6238	Hock Seng Lee Bhd	23.	5703	Muhibbah Engineering (M) Bhd
11.	3336	IJM Corporation Bhd	24.	4901	Nam Fatt Corporation Bhd
12.	8834	Ireka Corporation Bhd	25.	5093	PECD Bhd
13.	5063	Isyoda Corporation Bhd	26.	4073	Pilecon Engineering Bhd

27.	9598	Pintaras Jaya Bhd	35.	5054	TRC Synergy Bhd
28.	7055	PLB Engineering Bhd	36.	5042	TSR Capital Bhd
29.	7145	Prinsiptek Corporation Bhd	37.	4855	UEM Builders Bhd
30.	5070	Protasco Bhd	38.	1775	UEM World Bhd
31.	5117	Putrajaya Perdana Bhd	39.	9679	WCT Bhd
32.	5030	Ranhill Bhd	40.	4677	YTL Corporation Bhd
33.	5207	SBC Corporation Bhd	41.	2283	Zelan Bhd
34.	1813	SPK-Sentosa Corporation Bhd			

SECTOR: TRADING/SERVICES

No.	Code	Name of Company	No.	Code	Name of Company
1.	6599	AEON Co. (M) Bhd	38.	0058	JobStreet Corporation Bhd
2.	5099	AirAsia Bhd	39.	8672	Kamdar Group (M) Bhd
3.	5115	Alam Maritim Resources Bhd	40.	5079	KBES Bhd
4.	6351	Amway (Malaysia) Holdings Bhd	41.	5122	Kencana Petroleum Bhd
5.	7083	Analabs Resources Bhd	42.	3492	KFC Holdings (Malaysia) Bhd
6.	5055	Atis Corporation Bhd	43.	5035	Knusford Bhd
7.	6025	Berjaya Media Bhd	44.	6157	Konsortium Logistik Bhd
8.	6998	Bintai Kinden Corporation Bhd	45.	4847	Konsortium Transnasional Bhd
9.	5032	Bintulu Port Holdings Bhd	46.	5878	KPJ Healthcare Bhd
10.	7209	Cheetah Holdings Bhd	47.	6874	KUB Malaysia Bhd
11.	5104	CNI Holdings Bhd	48.	6491	Kumpulan Fima Bhd
12.	5136	Complete Logistic Services Bhd	49.	5843	Kump. Perangsang Selangor Bhd
13.	5037	Compugates Holdings Bhd	50.	7177	LCL Corporation Bhd
14.	5141	Dayang Enterprise Holdings Bhd	51.	2534	Liqua Health Corporation Bhd
15.	5132	Deleum Bhd	52.	5143	Luxchem Corporation Bhd
16.	7277	Dialog Group Bhd	53.	8559	M3nergy Bhd
17.	5908	DKSH Holdings (M) Bhd	54.	5077	Malaysian Bulk Carriers Bhd
18.	8265	Eastern Pacific Ind. Corp. Bhd	55.	7040	Malaysian Merchant Marine Bhd
19.	3557	Ecofirst Consolidated Bhd	56.	3824	Malaysian Mosaics Bhd
20.	5036	Edaran Bhd	57.	3514	Marco Holdings Bhd
21.	4774	Edaran Otomobil Nasional Bhd	58.	5983	MBM Resources Bhd
22.	0064	Efficient E-Solutions Bhd	59.	3875	Measat Global Bhd
23.	5056	Engtex Group Bhd	60.	3808	Mechmar Corporation Bhd
24.	5081	Esthetics International Group Bhd	61.	5090	Media Chinese International Ltd
25.	1368	Faber Group Bhd	62.	3069	Mega First Corporation Bhd
26.	6939	Fiamma Holdings Bhd	63.	8389	Metacorp Bhd
27.	9318	Fitters Diversified Bhd	64.	3816	MISC Bhd
28.	7210	Freight Management Hldg. Bhd	65.	2194	MMC Corporation Bhd
29.	0128	Frontken Corporation Bhd	66.	9032	MTD Capital Bhd
30.	3204	George Kent (Malaysia) Bhd	67.	9768	MTD Infraperdana Bhd
31.	3034	Hap Seng Consolidated Bhd	68.	4464	Naim Indah Corporation Bhd
32.	2062	Harbour-Link Group Bhd	69.	9806	Nationwide Exp. Courier Serv. Bh
33.	7455	Hexagon Holdings Bhd	70.	5509	NCB Holdings Bhd
34.	5046	Hock Sin Leong Group Bhd	71.	5533	OCB Bhd
35.	7013	Hubline Bhd	72.	5128	Ogawa World Bhd
36.	9555	Integrax Bhd	73.	3697	Oilcorp Bhd
37.	5673	Ipmuda Bhd	74.	3549	Opus Group Bhd

75.	6866	Padiberas Nasional Bhd	98.	9989	SRII Bhd
76.	5125	Pantech Group Holdings Bhd	99.	6084	Star Publications (M) Bhd
77.	5657	Parkson Holdings Bhd	100.	1201	Sumatec Resources Bhd
78.	5041	PBA Holdings Bhd	101.	6521	Suria Capital Holdings Bhd
79.	6254	PDZ Holdings (M) Bhd	102.	5119	Swee Joo Bhd
80.	8346	Perak Corporation Bhd	103.	0016	Symphony House Bhd
81.	5133	Petra Energy Bhd	104.	8524	Taliworks Corporation Bhd
82.	7108	Petra Perdana Bhd	105.	7228	Tanjung Offshore Bhd
83.	5681	Petronas Dagangan Bhd	106.	4863	Telekom Malaysia Bhd
84.	7081	Pharmaniaga Bhd	107.	5347	Tenaga Nasional Bhd
85.	7122	PJI Holdings Bhd	108.	8702	Texchem Resources Bhd
86.	5052	PLUS Expressways Bhd	109.	3999	The New Straits Time Press (M) B
87.	4634	Pos Malaysia Bhd	110.	5711	The Store Corporation Bhd
88.	7201	Progressive Impact Corp. Bhd	111.	4456	Time Engineering Bhd
89.	9415	QSR Brands Bhd	112.	8397	Tiong Nam Logistics Hldgs. Bhd
90.	8885	Reliance Pacific Bhd	113.	6888	TM International Bhd
91.	9652	SAAG Consolidated Bhd	114.	5140	Trans-Asia Shipping Corp. Bhd
92.	8567	Salcon Bhd	115.	9911	Triumphal Associates Bhd
93.	8575	Sapuracrest Petroleum Bhd	116.	7091	Unimech Group Bhd
94.	2356	Sarawak Energy Bhd	117.	5754	Utusan Melayu (M) Bhd
95.	7045	Scomi Marine Bhd	118.	7150	VADS Bhd
96.	9792	SEG International Bhd	119.	5016	Warisan TC Holdings Bhd
97.	4197	Sime Darby Bhd	120.	7293	Yinson Holdings Bhd

SECTOR: PROPERTIES

No.	Code	Name of Company	No.	Code	Name of Company
1.	5959	A & M Realty Bhd	23.	2097	Furqan Business Organisation Bhd
2.	1007	AMDB Bhd	24.	5020	Glomac Bhd
3.	5975	Asas Dunia Bhd	25.	7404	Gold Bridge Eng. & Const. Bhd
4.	4057	Asian Pac Holdings Bhd	26.	9962	Gromutual Bhd
5.	1473	Bandar Raya Developments Bhd	27.	5062	Hua Yang Bhd
6.	6602	BCB Bhd	28.	5018	Hunza Properties Bhd
7.	6173	Bina Darulaman Bhd	29.	5084	Ibraco Bhd
8.	5057	B inaik Equity Bhd	30.	5215	IJM Land Bhd
9.	1538	Bolton Bhd	31.	1635	IOI Properties Bhd
10.	5738	Country Heights Holdings Bhd	32.	6564	Johor Land Bhd
11.	5049	Country View Bhd	33.	6769	Keladi Maju Bhd
12.	6718	Crescendo Corporation Bhd	34.	5089	KLCC Property Holdings Bhd
13.	3484	Damansara Realty Bhd	35.	6653	Krisassets Holdings Bhd
14.	5401	Dijaya Corporation Bhd	36.	5038	KSL Holdings Bhd
15.	3417	Eastern & Oriental Bhd	37.	6246	Kumpulan Hartanah Selangor Bhd
16.	3085	Ekran Bhd	38.	5789	LBS Bina Group Bhd
17.	1147	Equine Capital Bhd	39.	8583	Mah Sing Group Bhd
18.	6815	EUPE Corporation Bhd	40.	9725	Mahajaya Bhd
19.	6041	Farlim Group (M) Bhd	41.	8141	Majuperak Holdings Bhd
20.	3107	FIMA Corporation Bhd	42.	6548	Malaysia Pacific Corporation Bhd
21.	8206	Focal Aims Holdings Bhd	43.	6181	Malton Bhd
22.	6335	Fountain View Development Bhd	44.	1694	Menang Corporation Bhd

45.	5033	Merge Housing Bhd	59.	1783	Selangor Properties Bhd
46.	8893	MK Land Holdings Bhd	60.	6017	SHL Consolidated Bhd
47.	3913	MUI Properties Bhd	61.	4375	South Malaysia Industries Bhd
48.	5043	Mutiara Goodyear Dev. Bhd	62.	8664	SP Setia Bhd
49.	5073	Naim Cendera Holdings Bhd	63.	6165	Sunrise Bhd
50.	5827	Oriental Interest Bhd	64.	6289	Sunway City Bhd
51.	6661	OSK Property Holdings Bhd	65.	2305	TAHPS Group Bhd
52.	6912	Pasdec Holdings Bhd	66.	2259	Talam Corporation Bhd
53.	8613	Perduren (M) Bhd	67.	1589	Tebrau Teguh Bhd
54.	2208	Petaling Tin Bhd	68.	5622	Triplc Bhd
55.	5339	PK Resources Bhd	69.	5148	UEM Land Holdings Bhd
56.	5075	Plenitude Bhd	70.	4561	United Malayan Land Bhd
57.	4596	Sapura Resources Bhd	71.	3158	YNH Property Bhd
58.	2224	Selangor Dredging Bhd	72.	2577	YTL Land & Development Bhd

SECTOR: PLANTATION

No.	Code	Name of Company	No.	Code	Name of Company
1.	2291	Asiatic Development Bhd	19.	6572	Kwantas Corporation Bhd
2.	7054	Astral Asia Bhd	20.	5026	MHC Plantations Bhd
3.	1899	Batu Kawan Bhd	21.	1902	Multi Vest Resources Bhd
4.	5069	BLD Plantation Bhd	22.	2038	Negri Sembilan Oil Palms Bhd
5.	8982	Cepatwawasan Group Bhd	23.	5047	NPC Resources Bhd
6.	1929	Chin Teck Plantations Bhd	24.	5113	Rimbunan Sawit Bhd
7.	3948	Dutaland Bhd	25.	2542	Riverview Rubber Estates Bhd
8.	5029	Far East Holdings Bhd	26.	5126	Sarawak Oil Palms Bhd
9.	2372	Glenealy Plantations (M) Bhd	27.	5135	Sarawak Plantation Bhd
10.	5138	Hap Seng Plantations Hldgs. Bhd	28.	2054	TDM Bhd
11.	2216	IJM Plantations Bhd	29.	8109	TH Group Bhd
12.	2607	Inch Kenneth Kajang Rubber PLC	30.	5112	TH Plantations Bhd
13.	1961	IOI Corporation Bhd	31.	2313	The Ayer Molek Rubber Co. Bhd
14.	5027	Kim Loong Resources Bhd	32.	6327	Tradewinds Plantation Bhd
15.	1996	Kretam Holdings Bhd	33.	9059	TSH Resources Bhd
16.	2445	Kuala Lumpur Kepong Bhd	34.	2593	United Malacca Bhd
17.	2003	Kulim (Malaysia) Bhd	35.	2089	United Plantations Bhd
18.	5193	Kurnia Setia Bhd			

SECTOR: TECHNOLOGY

No.	Code	Name of Company	No.	Code	Name of Company
1.	9547	AIC Corporation Bhd	10.	9075	Lityan Holdings Bhd
2.	7068	AKN Technology Bhd	11.	9822	LKT Industrial Bhd
3.	7204	D&O Ventures Bhd	12.	3867	Malaysian Pacific Industries Bhd
4.	8826	Eng Teknologi Holdings Bhd	13.	5011	Mesiniaga Bhd
5.	0021	GHL Systems Bhd	14.	0043	Metronic Global Bhd
6.	7022	Globetronics Technology Bhd	15.	0083	Notion Vtec Bhd
7.	0082	Green Packet Bhd	16.	7042	Patimas Computers Bhd
8.	5028	HeiTech Padu Bhd	17.	7160	Pentamaster Corporation Bhd
9.	6971	Kobay Technology Bhd	18.	5005	Unisem (M) Bhd

SECTOR: INFRASTRUCTURE (IPC)

No.	Code	Name of Company
1.	6947	Digi.Com Bhd
2.	6645	Lingkaran Trans Kota Hldgs. Bhd
3.	6807	Puncak Niaga Holdings Bhd
4.	5031	TIME dotCom Bhd
5.	6742	YTL Power International Bhd

SECTOR: FINANCE

No.	Code	Name of Company
1.	5258	BIMB Holdings Bhd
2.	1287	Pan Malaysia Holdings Bhd
3.	6139	Syarikat Takaful (M'sia) Bhd

LISTING BOARD: SECOND BOARD

SECTOR: CONSUMER PRODUCTS

No.	Code	Name of Company
1.	7051	Amtek Holdings Bhd
2.	7165	App Industries Bhd
3.	7156	Baswell Resources Bhd
4.	7243	Bio Osmo Bhd
5.	7193	Biosis Group Bhd
6.	7154	Caely Holdings Bhd
7.	7128	CAM Resources Bhd
8.	7035	CCK Consolidated Holdings Bhd
9.	9423	Chee Wah Corporation Bhd
10.	7179	DBE Gurney Resources Bhd
11.	9091	Emico Holdings Bhd
12.	7208	Euro Holdings Bhd
13.	7094	Eurospan Holdings Bhd
14.	9776	Farm's Best Bhd
15.	8605	Federal Furniture Hldgs. (M) Bhd
16.	7098	Foremost Holdings Bhd
17.	7722	Hing Yiap Knitting Industries Bhd
18.	7141	Huat Lai Resources Bhd
19.	7029	Hunza Consolidation Bhd
20.	8478	Hwa Tai Industries Bhd
21.	7216	Kawan Food Bhd
22.	7062	Khind Holdings Bhd
23.	8303	Kuantan Flour Mills Bhd
24.	9385	Lay Hong Bhd
25.	7943	Len Cheong Holding Bhd
26.	7085	LTKM Bhd
27.	7935	Milux Corporation Bhd
28.	7002	Nakamichi Corporation Bhd
29.	7237	Natural Bio Resources Bhd
30.	7215	Ni Hsin Resources Bhd
31.	9407	Paragon Union Bhd
32.	8966	Prolexus Bhd
33.	9946	Rex Industries Bhd
34.	7412	SHH Resources Holdings Bhd
35.	7246	Signature International Bhd
36.	7103	Spritzer Bhd
37.	7082	SYF Resources Bhd
38.	7211	Tafi Industries Bhd
39.	7439	Teck Guan Perdana Bhd
40.	9369	Teo Guan Lee Corporation Bhd
41.	7252	Teo Seng Capital Bhd
42.	7176	TPC Plus Bhd
43.	7203	Wang-Zheng Bhd
44.	7139	Yikon Corporation Bhd
45.	7066	Yong Tai Bhd

SECTOR: INDUSTRIAL PRODUCTS

No.	Code	Name of Company
1.	7061	Abric Bhd
2.	9148	Advanced Pack. Tech (M) Bhd
3.	7146	Ae Multi Holdings Bhd
4.	7116	Aikbee Resources Bhd
5.	7214	A-Rank Bhd
6.	7070	Astral Supreme Bhd
7.	7048	Atlan Holdings Bhd
8.	7181	Aturmaju Resources Bhd
9.	7044	Autoair Holdings Bhd
10.	7008	AV Ventures CorporationBhd
11.	7447	Axis Incorporation Bhd
12.	7005	B.I.G Industries Bhd
13.	7221	BSL Corporation Bhd
14.	7188	BTM Resources Bhd

15.	8052	Central Industrial Corporation Bhd	65.	7049	OCI Bhd
16.	7027	Changhuat Corporation Bhd	66.	9954	Pahanco Corporation Bhd
17.	7016	Chuan Huat Resources Bhd	67.	7190	Pelangi Publishing Group Bhd
18.	7986	CN Asia Corporation Bhd	68.	9997	Pensonic Holdings Bhd
19.	7041	CNLT (Far East) Bhd	69.	7080	Permaju Industries Bhd
20.	8044	Computer Forms (Malaysia) Bhd	70.	7163	PJBUMI Bhd
21.	8435	Concrete Engineering Prod. Bhd	71.	7172	PMB Technology Bhd
22.	7157	CYL Corporation Bhd	72.	8117	Poly Glass Fibre (M) Bhd
23.	8176	Denko Industries Corporation Bhd	73.	9458	Premium Nutrients Bhd
24.	7114	D'nonce Technology Bhd	74.	8273	Public Packages Holding Bhd
25.	8907	EG Industries Bhd	75.	7544	Quality Concrete Holdings Bhd
26.	7189	Emas Kiara Industries Bhd	76.	7498	Ralco Corporation Bhd
27.	8958	Energreen Corporation Bhd	77.	7765	Rapid Synergy Bhd
28.	7249	Ewein Bhd	78.	7232	Resintech Bhd
29.	7168	Furniweb Industrial Products Bhd	79.	8087	Rock Chemical Ind. (M'sia) Bhd
30.	7161	Fututech Bhd	80.	9237	Sarawak Concrete Industries Bhd
31.	7086	Gefung Holdings Bhd	81.	7239	Scanwolf Corporation Bhd
32.	7197	Ge-Shen Corporation Bhd	82.	7247	SCGM Bhd
33.	8281	Golden Frontier Bhd	83.	7366	Scomi Engineering Bhd
34.	7192	Goodway Integrated Ind. Bhd	84.	7073	Seacera Tiles Bhd
35.	7096	GPA Holdings Bhd	85.	7115	SKB Shutters Corporation Bhd
36.	7676	Gunung Capital Bhd	86.	7248	SLP Resources Bhd
37.	9342	Harvest Court Industries Bhd	87.	7132	SMIS Corporation Bhd
38.	7919	HPI Resources Bhd	88.	7099	SMPC Corporation Bhd
39.	7222	Imaspro Corporation Bhd	89.	7143	Stone Master Corporation Bhd
40.	7183	Ire-Tex Corporation Bhd	90.	9741	STS Technic Bhd
41.	7220	IRM Group Bhd	91.	7358	Sunchirin Industries (M) Bhd
42.	8648	Jasa Kita Bhd	92.	8656	Super Enterprise Holdings Bhd
43.	7043	JMR Conglomeration Bhd	93.	7235	Superlon Holdings Bhd
44.	7104	Jotech Holdings Bhd	94.	8699	Syarikat Kayu Wangi Bhd
45.	7092	JPK Holdings Bhd	95.	7097	Ta Win Holdings Bhd
46.	7199	Kein Hing International Bhd	96.	9849	Tai Kwong Yokohama Bhd
47.	7017	Komarkcorp Bhd	97.	7024	Techventure Bhd
48.	9636	Kosmo Technology Industrial Bhd	98.	7854	Timberwell Bhd
49.	7033	Kumpulan H & L High-Tech Bhd	99.	7285	Tomypak Holdings Bhd
50.	7130	Kumpulan Powernet Bhd	100.	7173	Toyo Ink Group Bhd
51.	7064	Latexx Partners Bhd	101.	7026	Toyochem Corporation Bhd
52.	8494	LBI Capital Bhd	102.	7147	Tracoma Holdings Bhd
53.	8079	Lee Swee Kiat Group Bhd	103.	7186	UDS Capital Bhd
54.	7194	Limahsoon Bhd	104.	7227	UMS-Neiken Group Bhd
55.	7118	Lipo Corporation Bhd	105.	9687	United Bintang Bhd
56.	9199	Lysaght Galvanized Steel Bhd	106.	7127	United Kotak Bhd
57.	7781	Major Team Holdings Bhd	107.	7595	VTI Vintage Bhd
58.	8192	Mercury Industries Bhd	108.	7226	Watta Holdings Bhd
59.	7059	Metal Reclamation Bhd	109.	8818	Wawasan TKH Holdings Bhd
60.	9024	Metech Group Bhd	110.	7587	Wonderful Wire & Cable Bhd
61.	7079	Minply Holdings (M) Bhd	111.	7050	Wong Engineering Corp. Bhd
62.	8311	Mithril Bhd	112.	7025	Woodlandor Holdings Bhd
63.	7004	Multi-Code Elect. Ind. (M) Bhd	113.	7245	WZ Steel Bhd
64.	9539	Multi-Usage Holdings Bhd	114.	7196	Ya Horng Electronic (M) Bhd

SECTOR: CONSTRUCTION

No.	Code	Name of Company	No.	Code	Name of Company
1.	7007	ARK Resources Bhd	6.	9628	Lebar Daun Bhd
2.	7023	Bina Goodyear Bhd	7.	7617	Magna Prima Bhd
3.	7047	Fajarbaru Builder Group Bhd	8.	7641	Seloga Holdings Bhd
4.	7010	Grand Hoover Bhd	9.	9717	Sycal Ventures Bhd
5.	9083	Kumpulan Jetson Bhd	10.	7028	Zecon Bhd

SECTOR: TRADING/SERVICES

No.	Code	Name of Company	No.	Code	Name of Company
1.	7315	AHB Holdings Bhd	19.	8923	Nagamas International Bhd
2.	7031	Amtel Holdings Bhd	20.	9903	Nepline Bhd
3.	7579	AWC Facility Solutions Bhd	21.	7927	Ngiu Kee Corporation (M) Bhd
4.	7241	BHS Industries Bhd	22.	7206	Ramunia Holdings Bhd
5.	7117	Century Logistics Holdings Bhd	23.	7032	Rhythm Consolidated Bhd
6.	7018	CME Group Bhd	24.	7212	Satang Holdings Bhd
7.	7471	Eden Inc Bhd	25.	7053	See Hup Consolidated Bhd
8.	9377	FSBM Holdings Bhd	26.	9431	Seni Jaya Corporation Bhd
9.	7242	Global Carriers Bhd	27.	9563	Stamford College Bhd
10.	7105	Golsta Synergy Bhd	28.	9474	Tamadam Bonded Warehouse Bhd
11.	7110	Haisan Resources Bhd	29.	7218	Transocean Holdings Bhd
12.	7236	Help International Corp. Bhd	30.	8842	TSM Global Bhd
13.	7185	Kejuruteraan Samudra Timur Bhd	31.	7137	UMS Holdings Bhd
14.	9121	KPS Consortium Bhd	32.	7250	Uzma Bhd
15.	7170	LFE Corporation Bhd	33.	7251	Vastalux Energy Bhd
16.	8486	Lion Forest Industries Bhd	34.	7240	Voir Holdings Bhd
17.	7234	MESB Bhd	35.	7039	WWE Holdings Bhd
18.	7219	Minetech Resources Bhd			

SECTOR: PROPERTIES

No.	Code	Name of Company
1.	9814	Bertam Alliance Bhd
2.	7889	Mulpha Land Bhd
3.	7003	Y&G Corp Bhd

SECTOR: PLANTATION

No.	Code	Name of Company
1.	7501	Harn Len Corporation Bhd
2.	9695	Pembinaan Limbongan Setia Bhd
3.	8419	PWE Industries Bhd
4.	7382	Tanah Emas Corporation Bhd

SECTOR: TECHNOLOGY

No.	Code	Name of Company
1.	7195	Comintel Corporation Bhd
2.	8338	Dataprep Holdings Bhd
3.	9008	Formis Resources Bhd
4.	9393	Industronics Bhd
5.	9334	KESM Industries Bhd

LISTING BOARD: MESDAQ MARKET

SECTOR: INDUSTRIAL PRODUCTS

No.	Code	Name of Company	No.	Code	Name of Company
1.	0105	Asia Poly Holdings Bhd	12.	0025	LNG Resources Bhd
2.	0076	Carotech Bhd	13.	0070	MQ Technology Bhd
3.	0091	Daya Materials Bhd	14.	0049	Oceancash Pacific Bhd
4.	0006	Discomp Bhd	15.	0035	Opcom Holdings Bhd
5.	0067	Ecofuture Bhd	16.	0047	Perisai Petroleum Teknologi Bhd
6.	0100	ES Ceramics Technology Bhd	17.	0038	Plastrade Technology Bhd
7.	0109	Flonic Hi-Tec Bhd	18.	0133	Sanichi Technology Bhd
8.	0136	Greenyield Bhd	19.	0028	Scope Industries Bhd
9.	0125	HDM-Carlaw Corporation Bhd	20.	0055	Sersol Technologies Bhd
10.	0061	Impressive Edge Group Bhd	21.	0001	Supercomal Technologies Bhd
11.	0054	Karyon Industries Bhd	22.	0084	Techfast Holdings Bhd

SECTOR: TECHNOLOGY

No.	Code	Name of Company	No.	Code	Name of Company
1.	0123	Airocom Technology Bhd	29.	0034	Ingenuity Solutions Bhd
2.	0068	Asdion Bhd	30.	0094	INIX Technologies Holdings Bhd
3.	0039	AsiaEP Bhd	31.	0088	INS Bioscience Bhd
4.	0072	AT Systematization Bhd	32.	0003	Intelligent Edge Technologies Bhd
5.	0130	BCT Technology Bhd	33.	0069	I-Power Bhd
6.	0098	Borneo Aqua Harvest Bhd	34.	0010	IRIS Corporation Bhd
7.	0041	CBS Technology Bhd	35.	0131	ISS Consulting Solutions Bhd
8.	0102	Connectcounty Holdings Bhd	36.	0146	JF Technology Bhd
9.	0079	Cwork Systems Bhd	37.	0127	JHM Consolidation Bhd
10.	0022	Cybertowers Bhd	38.	0111	K-One Technology Bhd
11.	0029	Digistar Corporation Bhd	39.	0110	KZEN Solutions Bhd
12.	0063	DIS Technology Holdings Bhd	40.	0107	Litespeed Education Tech. Bhd
13.	0036	DVM Technology Bhd	41.	0017	M3 Technologies (Asia)Bhd
14.	0030	eBworx Bhd	42.	0052	MEMS Technology Bhd
15.	0090	Elsoft Research Bhd	43.	0075	Mexter Technology Bhd
16.	0081	Equator Life Science Bhd	44.	0126	Microlink Solutions Bhd
17.	0118	ETI Tech Corporation Bhd	45.	0112	Mikro Bhd
18.	0065	Excel Force MSC Bhd	46.	0085	MLABS Systems Bhd
19.	0119	Extol MSC Bhd	47.	0059	M-Mode Berhad
20.	0116	Focus Dynamics Tech. Bhd	48.	0113	MMS Ventures Bhd
21.	0071	Fotronics Corporation Bhd	49.	0042	MoBif Bhd
22.	0104	Genetec Technology Bhd	50.	0092	mTouche Technology Bhd
23.	0020	Global Soft (MSC) Bhd	51.	0108	N2N Connect Bhd
24.	0045	GPRO Technology Bhd	52.	0096	Nextnation Communication Bhd
25.	0056	Grand-Flo Solution Bhd	53.	0026	Nova MSC Bhd
26.	0139	H-Display (MSC) Bhd	54.	0074	Online One Corporation Bhd
27.	0023	IFCA MSC Bhd	55.	0040	OpenSys (M) Bhd
28.	0024	Infortech Alliance Bhd	56.	0018	Oriented Media Group Bhd

57.	0015	Orisoft Technology Bhd	68.	0140	Tejari Technologies Bhd
58.	0005	Palette Multimedia Bhd	69.	0060	The Media Shoppe Bhd
59.	0007	PUC Founder (MSC) Bhd	70.	0062	Tricubes Bhd
60.	0106	Rexit Bhd	71.	0120	VisDynamics Holdings Bhd
61.	0135	Scan Associates Bhd	72.	0097	Vitrox Corporation Bhd
62.	0129	Silver Ridge Holdings Bhd	73.	0050	Viztel Solutions Bhd
63.	0117	SMR Technologies Bhd	74.	0008	Willowglen Msc Bhd
64.	0093	Solution Engineering Hldgs. Bhd	75.	0115	Wimems Corporation Bhd
65.	0048	Tamco Corporate Holdings Bhd	76.	0141	Winsun Technologies Bhd
66.	0033	Tecasia Group Bhd	77.	0086	YGL Convergence Bhd
67.	0132	TechnoDex Bhd			

SECTOR: TRADING/SERVICES

No.	Code	Name of Company
1.	0122	Advance Information Mktg. Bhd
2.	0011	Brite-Tech Bhd
3.	0051	Cuscapi Bhd
4.	0087	eB Capital Bhd
5.	0080	Envair Holding Bhd
6.	0078	GD Express Carrier Bhd
7.	0147	Innity Corporation Bhd
8.	0077	Kannaltec Bhd
9.	0143	Key Asic Bhd
10.	0095	Key West Global Telecom. Bhd
11.	0138	My E.G. Services Bhd
12.	0032	REDtone International Bhd
13.	0099	Scicom (MSC) Bhd
14.	0137	StemLife Bhd
15.	0089	Tex Cycle Technology (M) Bhd
16.	0145	TFP Solutions Bhd

SECTOR: FINANCE

No.	Code	Name of Company
1.	0013	MCM Technologies Bhd
2.	0053	OSK Ventures International Bhd

LIST OF NON-*SHARIAH*-COMPLIANT STOCKS

No	Company Name	Sector	Listing Board
1	Advance Synergy Bhd	Travel & Leisure	MB
2	Advance Synergy Capital Bhd	Financial Services (Sector)	MB
3	Affin Holdings Bhd	Banks	MB
4	Aliran Ihsan Resources Bhd	Industrial Engineering	MB
5	Alliance Financial Group Bhd	Banks	MB
6	Allianz General Ins. Malaysia Bhd	Nonlife Insurance	MB
7	AMMB Holdings Bhd	Banks	MB
8	Apex Equity Holdings Bhd	Financial Services (Sector)	MB
9	Asia Pacific Land Bhd	Real Estate Invest. & Service	MB
10	Astro All Asia Networks Plc.	Media	MB
11	Berjaya Corporation Bhd	Media	MB
12	Berjaya Land Bhd	Travel & Leisure	MB
13	Berjaya Media Bhd	Media	MB
14	Berjaya Sports Toto Bhd	Travel & Leisure	MB
15	Boustead Holdings Bhd	General Industrials	MB
16	Box-Pak (Malaysia) Bhd	General Industrials	MB
17	British American Tobacco (M) Bhd	Tobacco	MB
18	Bumiputra-Commerce Holdings Bhd	Banks	MB
19	Bursa Malaysia Bhd	Financial Services (Sector)	MB
20	Cahya Mata Sarawak Bhd	Construction & Materials	MB
21	Carlsberg Brewery Malaysia Bhd	Beverages	MB
22	Daiman Development Bhd	Real Estate Invest. & Service	MB
23	DFZ Capital Bhd	General Retailers	MB
24	DRB-Hicom Bhd	General Industrials	MB
25	Dreamgate Corporation Bhd	Support Services	MB
26	ECM Libra Financial Group Bhd	Financial Services (Sector)	MB
27	Encorp Bhd	Support Services	MB
28	EON Capital Bhd	Banks	MB
29	Fraser & Neave Holdings Bhd	Beverages	MB
30	General Corporation Bhd	Household Goods & Home Cons	MB
31	Genting Bhd	Travel & Leisure	MB
32	Golden Plus Holdings Bhd	Real Estate Invest. & Service	MB
33	Goldis Bhd	General Industrials	MB
34	Grand Central Enterprises Bhd	Travel & Leisure	MB
35	Guinness Anchor Bhd	Beverages	MB
36	Gula Perak Bhd	Travel & Leisure	MB
37	Guocoland (Malaysia) Bhd	Real Estate Invest. & Service	MB

38	Hai-O Enterprise Bhd	Beverages	MB
39	Halim Mazmin Bhd	Industrial Transportation	MB
40	Harrisons Holdings (M) Bhd	Support Services	MB
41	Hexza Corporation Bhd	Chemicals	MB
42	HLG Capital Bhd	Financial Services (Sector)	MB
43	Hong Leong Bank Bhd	Banks	MB
44	Hong Leong Financial Group Bhd	Banks	MB
45	Hwang-DBS (M) Bhd	Financial Services (Sector)	MB
46	I-Bhd	Electronic & Electrical Equip.	MB
47	Idaman Unggul Bhd	Nonlife Insurance	MB
48	IGB Corporation Bhd	Real Estate Invest. & Service	MB
49	Integrated Logistics Bhd	Industrial Transportation	MB
50	Jerneh Asia Bhd	Nonlife Insurance	MB
51	Johan Holdings Bhd	Financial Services (Sector)	MB
52	JT International Bhd	Tobacco	MB
53	K & N Kenanga Holdings Bhd	Financial Services (Sector)	MB
54	KAF-Seagroatt & Campbell Bhd	Financial Services (Sector)	MB
55	Karambunai Corporation Bhd	Travel & Leisure	MB
56	Kluang Rubber Co. (M) Bhd	Food Producers	MB
57	Kramat Tin Dredging Bhd	Financial Services (Sector)	MB
58	Kuchai Development Bhd	Financial Services (Sector)	MB
59	Kumpulan Europlus Bhd	Real Estate Invest. & Service	MB
60	Kurnia Asia Bhd	Nonlife Insurance	MB
61	Land & General Bhd	Real Estate Invest. & Service	MB
62	Landmarks Bhd	Travel & Leisure	MB
63	Lien Hoe Corporation Bhd	Construction & Materials	MB
64	LPI Capital Bhd	Nonlife Insurance	MB
65	MAA Holdings Bhd	Life Insurance	MB
66	Malayan Banking Bhd	Banks	MB
67	Malayan United Industries Bhd	General Retailers	MB
68	Malaysia Airports Holdings Bhd	Industrial Transportation	MB
69	Malaysia Building Society Bhd	Financial Services (Sector)	MB
70	Malaysian Airline System Bhd	Travel & Leisure	MB
71	Malpac Holdings Bhd	Food Producers	MB
72	Manulife Holdings Bhd	Nonlife Insurance	MB
73	Matrix International Bhd	Real Estate Invest. & Service	MB
74	MBf Holdings Bhd	Financial Services (Sector)	MB
75	Meda Inc. Bhd	Real Estate Invest. & Service	MB
76	Metro Kajang Holdings Bhd	Real Estate Invest. & Service	MB

77	MNRB Holdings Bhd	Nonlife Insurance	MB
78	Mulpha International Bhd	Travel & Leisure	MB
79	Multi-Purpose Holdings Bhd	Travel & Leisure	MB
80	NV Multi Corporation Bhd	General Retailers	MB
81	Olympia Industries Bhd	Travel & Leisure	MB
82	OSK Holdings Bhd	Financial Services (Sector)	MB
83	Pacific & Orient Bhd	Nonlife Insurance	MB
84	Pacificmas Bhd	Nonlife Insurance	MB
85	Pan Malaysia Capital Bhd	Financial Services (Sector)	MB
86	Pan Malaysian Industries Bhd	General Retailers	MB
87	Paramount Corporation Bhd	Real Estate Invest. & Service	MB
88	Petra Perdana Bhd	Oil Equipment & Services	MB
89	PJ Development Holdings Bhd	Construction & Materials	MB
90	Prime Utilities Bhd	Financial Services (Sector)	MB
91	Proton Holdings Bhd	Automobiles & Parts	MB
92	Public Bank Bhd	Banks	MB
93	Pulai Springs Bhd	Travel & Leisure	MB
94	RCE Capital Bhd	Financial Services (Sector)	MB
95	Resorts World Bhd	Travel & Leisure	MB
96	RHB Capital Bhd	Banks	MB
97	Shangri-La Hotels (M) Bhd	Travel & Leisure	MB
98	Silk Holdings Bhd	Construction & Materials	MB
99	Sindora Bhd	Food Producers	MB
100	Suiwah Corporation Bhd	General Retailers	MB
101	Sungei Bagan Rubber Co. (M) Bhd	Food Producers	MB
102	Sunway Holdings Bhd	Construction & Materials	MB
103	TA Enterprise Bhd	Financial Services (Sector)	MB
104	Tanco Holdings Bhd	Real Estate Invest. & Service	MB
105	The Nomad Group Bhd	Financial Services (Sector)	MB
106	Tien Wah Press Holdings Bhd	Support Services	MB
107	TMC Life Sciences Bhd	Health Care Equip. & Service	MB
108	Tradewinds Corporation Bhd	Travel & Leisure	MB
109	Transmile Group Bhd	Aerospace & Defence	MB
110	UBG Bhd	Banks	MB
111	Unico-Desa Plantations Bhd	Food Producers	MB
112	Fast Track Solution Holdings Bhd	Software & Computer Services	MQ
113	MNC Wireless Bhd	Mobile Telecommunications	MQ
114	YTL E-Solutions Bhd	Software & Computer Services	MQ
115	Borneo Oil Bhd	Travel & Leisure	SB

116	Bright Packaging Industry Bhd	General Industrials	SB
117	GSB Group Bhd	Leisure Goods	SB
118	Malaysia Packaging Industry Bhd	General Industrials	SB
119	Takaso Resources Bhd	Personal Goods	SB
120	Widetech (M) Bhd	Construction & Materials	SB

Key:
MB - Main Board
SB - Second Board
MQ - MESDAQ

List of Approved Unit Trust Management Company in Relation to Unit Trust Funds
(As at 30 April 2009)

No.	Management Company / Address	No.	Management Company / Address	No.	Management Company / Address	No.	Management Company / Address
1	**Affin Fund Management Berhad** Tingkat 22, Menara Boustead Jalan Raja Chulan (P.O. Box 11571) 50200 Kuala Lumpur Tel : 03-8142 4700 Fax : 03-2034 2881	2	**Alliance Investment Management Berhad** 23.01, Tingkat 23, Menara Multi-Purpose Capital Square No. 8, Jalan Munshi Abdullah 50100 Kuala Lumpur Tel : 03-2698 4299 Fax : 03-2693 0792	3	**AmanahRaya Unit Trust Management Sdn Bhd** Tingkat 7, Wisma Amanah Raya No. 2, Jalan Ampang 50450 Kuala Lumpur Tel : 03-2054 7200 Fax : 03-2054 7300	4	**Amanah Mutual Berhad** Tingkat 34, Menara PNB 201-A Jalan Tun Razak 50400 Kuala Lumpur 59000 Kuala Lumpur Tel : 03-2034 0800 Fax : 03-2163 3212
5	**Amanah Saham Kedah Berhad** 178 & 179, Jalan Sultanah Sambungan 05250 Alor Setar Kedah Tel : 04-730 0323 Fax : 04-730 0320	6	**Amanah Saham Nasional Berhad** Tingkat 25, Menara PNB 201-A, Jalan Tun Razak 50400 Kuala Lumpur Tel : 03-2050 5100 / 03-2161 0588 Fax : 03-2050 5750 / 03-2161 0082	7	**Amanah Saham Sarawak Berhad** Lot 357, Section 5 KTLD, Jalan Satok 93400 Kuching, Sarawak Tel : 082-231 433 / 082-231 434 Fax : 082-231 461	8	**AmInvestment Services Berhad** Tingkat 9, Bangunan AmBank Group 55, Jalan Raja Chulan 50200 Kuala Lumpur Tel : 03-2032 2888 / 03-2036 2633 Fax : 03-2031 5210
9	**Apex Investment Services Berhad** Suite 7.02, Tingkat 7, Menara Apex Off Jalan Semenyih Bukit Mewah 43000 Kajang, Selangor Tel : 03-8736 1118 Fax : 03-8737 4532 / 8737 7924	10	**Areca Capital Sdn Bhd** 107, Block B,Pusat Dagangan Phileo Damansara 1 No. 9, Jalan 16/11 Off Jalan Damansara 46350 Petaling Jaya, Selamgor Tel : 03-7956 3111 Fax : 03-7955 4111	11	**Asia Unit Trusts Berhad** Level 8, Menara MIDF 82, Jalan Raja Chulan 50200 Kuala Lumpur Tel : 03-2173 8888 Fax : 03-2173 8466	12	**ASM Investment Services Berhad** Tingkat Bawah, Wisma ASMB No. 1A, Jalan Lumut 50400 Kuala Lumpur Tel : 03-4145 3800 Fax : 03-4145 3801
13	**Avenue Invest Berhad** Tingkat 3, Wisma Genting Jalan Sultan Ismail 50250 Kuala Lumpur Tel : 03-2089 2900 / 2178 1600 Fax : 03-2089 2808 / 2020 6178	14	**BIMB Investment Management Berhad** *(formerly known as BIMB Unit Trust Mgmt Bhd)* Suite 15.01, Level 15 Menara Tun Razak Jalan Raja Laut 50350 Kuala Lumpur Tel : 03-2694 6617 / 2694 6619 Fax : 03-2694 3516	15	**CIMB-Principal Asset Management Bhd** Level 5, Menara Milenium 8 Jalan Damanlela, Bukit Damansara 50490 Kuala Lumpur Tel : 03-2084 2000 Fax : 03-2084 2031	16	**CIMB Wealth Advisors Berhad** 52 & 54, Jalan SS 21/39 Damansara Utama 47400 Petaling Jaya, Selangor Selangor Tel : 03-7718 5000 Fax : 03-7726 5088
17	**CMS Trust Management Bhd** Level 39, Menara Standard Chartered (Peti Surat No. 11) Jalan Sultan Ismail 50250 Kuala Lumpur Tel : 03-2142 6888 Fax : 03-2142 6887	18	**HLG Unit Trust Berhad** Level 8, Menara HLA No. 3, Jalan Kia Peng 50450 Kuala Lumpur Tel : 03-2733 2500 Fax : 03-2733 2550	19	**HWANGDBS Investment Management Bhd** Suite 12-03, Tingkat 12, Menara Keck Seng 203 Jalan Bukit Bintang 55100 Kuala Lumpur Tel : 03-2142 1881 Fax : 03-2143 1881	20	**ING Funds Berhad** Level 18, Menara ING 84 Jalan Raja Chulan (P.O. Box 10846) 50927 Kuala Lumpur Tel : 03-2170 1888 Fax : 03-2715 3800

List of Approved Unit Trust Management Company in Relation to Unit Trust Funds
(As at 30 April 2009)

No.	Management Company / Address	No.	Management Company / Address	No.	Management Company / Address	No.	Management Company / Address
21	**Inter-Pacific Asset Management Sdn Bhd** West Wing, Level 13, Berjaya Times Square No. 1, Jalan Imbi 55100 Kuala Lumpur Tel : 03-2117 1888 Fax : 03-2144 1686	22	**KAF Fund Management Sdn Bhd** Level 13, Chulan Tower No. 3, Jalan Conlay 50450 Kuala Lumpur Tel : 03-2168 8998 Fax : 03-2168 8988	23	**Kenanga Unit Trust Berhad** Suite 9.05, Tingkat 9, Kenanga International Jalan Sultan Ismail 50250 Kuala Lumpur Tel : 03-2161 9755 Fax : 03-2161 9796	24	**KSC Capital Berhad** Suite E-13A-15 Block E, Plaza Mont' Kiara Plaza Mont' Kiara 2 Jalan 1/70C, Mont' Kiara 50480 Kuala Lumpur Tel : 03-6203 3888 Fax : 03-6201 2118
25	**MAAKL Mutual Berhad** 1.03 Mezzanine Floor, Menara MAA Menara MAA 12, Jalan Dewan Bahasa 50460 Kuala Lumpur Tel : 03-2146 9588 Fax : 03-2143 2143	26	**OSK-UOB Unit Trust Management Berhad** Tingkat 5, Plaza OSK Jalan Ampang 50450 Kuala Lumpur Tel : 03-2164 3036 Fax : 2164 4226	27	**Pacific Mutual Fund Berhad** 1001, Level 10, Uptown 1 1 Jalan SS21/58 Damansara Uptown 47400 Petaling Jaya, Selangor Tel : 03-7725 9877 Fax : 03-7725 9860	28	**Pelaburan Johor Berhad** L5-106-109, Aras Ledang Plaza Kotaraya 80000 Johor Bahru, Johor Tel : 07-223 0350 Fax : 07-224 5251
29	**Pengurusan KUMPA Berhad** Tingkat 20, Kompleks Teruntum Jalan Mahkota 25720 Kuantan, Pahang Tel : 09-513 3900 Fax : 09-513 3949	30	**Permodalan BSN Berhad** Tingkat 18, Wissma BSN Jalan Ampang 50450 Kuala Lumpur Tel : 03-2162 3222 / 03-2164 5545 Fax : 03-2143 1910	31	**Pheim Unit Trusts Berhad** Tingkat 3 (Peti Surat 12), Menara Hap Seng 1 & 3 Jalan P.Ramlee 50250 Kuala Lumpur Tel : 03-2142 8888 Fax : 03-2141 9199	32	**Phillip Mutual Berhad** B-2-7, Megan Phileo Avenue 12 Jalan Yap Kwan Seng 50450 Kuala Lumpur Tel : 03-2715 9802 Fax : 03-2166 6417
33	**Prudential Fund Management Berhad** Level 12, Menara Prudential 10 Jalan Sultan Ismail 50250 Kuala Lumpur Tel : 03-2052 3388 Fax : 03-2170 0299	34	**PTB Unit Trust Berhad** Unit 822, Tingkat 8, Blok B, Lobby B Kelana Centre Point No. 3, Jalan SS7/19 47301 Petaling Jaya, Selangor Tel : 03-7880 0879 Fax : 03-7803 5779	35	**Public Mutual Berhad** Blok B, Sri Damansara Business Park Persiaran Industri Bandar Sri Damansara 52200 Kuala Lumpur Tel : 03-6279 6800 Fax : 03-6277 9800	36	**RHB Investment Management Sdn Bhd** *(formerly known as RHB Unit Trust Mgmt Bhd)* Tingkat 7, RHB 1 424, Jalan Tun Razak 50400 Kuala Lumpur Tel : 03-9286 2666 Fax : 03-9286 2835
37	**Saham Sabah Berhad** Suite 1-9-W2, W3 & W4 Tingkat 9, CPS Tower, Centre Point Sabah No. 1, Jalan Centre Point 88000 Kota Kinabalu, Sabah Tel : 082-266 588 Fax : 082-262 588	38	**TA Investment Management Berhad** Tingkat 23, Menara TA One No. 22, Jalan P.Ramlee 50480 Kuala Lumpur Tel : 03-2031 6603 Fax : 03-2031 4479	39	**Tune Money Capital Sdn Bhd** Level 7, Menara TSH No. 8 Jalan Semantan Damansara Heights 50490 Kuala Lumpur Tel : 03-2092 8390 Fax : 03-2092 8239		

APPENDIX III

LIST OF INTERVIEW QUESTIONS

Please note:

1. The following questions were designed to include the most important issues or subject interest of the study. The questions would guide the interview session throughout.
2. The questions are not exhaustive and in the event that further clarification to a particular question is required, additional follow-up questions may be asked during the interview session.
3. Since we value our respondents' confidentiality significantly, the interview questions have been designed so that they would not divulge our respondents' secrecy in any way whatsoever. However, in the unlikely event that if any of the questions may be perceived as could seriously jeopardize our respondents' confidentiality, such questions can be withdrawn in the best interest of our respondents by informing the interviewer prior to the interview session. Nevertheless, we do hope that our respondents will attempt to provide sincere and appropriate feedback to as many interview questions as possible.
4. Efforts will be made to limit the duration of the interview session at between 45-60 minutes.

Your kind cooperation is highly appreciated. Thank you!

No	Questions	Remarks
1	***General questions about your company and unit trust investment fund(s) under your management:***	
	i) How long has your company been established?	
	ii) How many staff and investment personnel or experts does your company have? Their professional qualification?	
	iii) How many clients (unit holders) do you have and their general investment profile in terms of their preferred types of investment.	
	iv) What is the size of unit trust fund(s) under your management both in terms of their total value and number of units?	
	v) How many conventional/unrestricted unit trust fund(s) under your management, their types and their total value?	
	vi) Do you outsource your investment managers? Do you select them based on their religious background?	
	vii) How many Islamic-based unit trust fund(s) under your management, their types and their total value?	
	viii) What is the general profile of your Islamic-based unit trust clients in terms of their religion and trading behaviour?	
	ix) Why do you think people invest in your fund? Economics or religious driven?	
	x) Why do you offer Islamic funds?	

No	Questions	Remarks
2	***Questions related to the operations and management of Islamic-based unit trust fund(s)***	
	i) What is the underlying *Shariah* principle applied with regards to the contract relationships between fund manager-fund management company-unit holders?	
	ii) What is the underlying *Shariah* principle used with regards to the fund deposited and its usage?	
	iii) How return is calculated or distributed? PLS?	
	iv) What is the underlying principle regarding the fund-manager-unit holders contract relationship?	
	v) Is the operations of *Shariah*-based funds including the proceeds and revenues separated from non-*Shariah*-based funds?	
	vi) How is the income purification being undertaken, and what is being purified: the fund earnings, or dividend?	
	vii) Does your fund maintain a profit equalization reserves account to smoothen future earnings?	
	viii) What type of investment instruments or securities that you invest the most in your Islamic unit trust portfolio?	
	ix) Is your Islamic funds managed by the same people who managed non Islamic funds?	
	x) Do you also invest in financial derivatives such as options and futures contracts for your Islamic unit trust portfolio? If yes, for what purpose is your investment in derivative financial instruments mainly?	
3	***Questions related to Shariah monitoring and supervision of Islamic-based unit trust fund(s) under your supervision:***	
	i) Are the operations of your fund entirely *Shariah*-compliant?	
	ii) Does your company have an independent *Shariah* advisory board?	
	iii) If your company does not have an independent *Shariah* advisory board, who is being given the responsibility to monitor your company's investment operations to ensure strict compliant to the *Shariah* principles?	
	iv) What is the primary role and authority of the *Shariah* advisory board?	
	v) How does the *Shariah* advisory board involved in the day-to-day management and decision making process of your fund operations?	
	vi) How does your fund operations monitored by the *Shariah* advisory board? Does your funds subjected to periodical *Shariah* auditing?	
	vii) How frequent do you conduct review on your investment portfolio to ensure full compliant towards *Shariah* principles including to cater for the arrival of newly listed companies or to any changes in the *halal* (permissible) status of the existing companies in your portfolio.	
	viii) Do you depend entirely on the list of *Shariah*-approved stocks issued by the Securities Commission (SC) for your *halal* status reference?	

3	ix) In securities selection process, how do you make the decision whether or not to include a particular asset into your unit trust portfolios?	
4	***Questions related to the performance of Islamic unit trust fund(s) under your management:***	
	i) How do you rate the performance of Islamic unit trust fund(s) under your management?	
	ii) How do perceive the performance of Islamic unit trust fund(s) vis-à-vis conventional or unrestricted fund(s)?	
	iii) What do you think the main contributing factor(s) that affect the performance of Islamic unit trust fund(s)?	
	iv) What criteria do you use when allocating your assets, or selecting industry or stock? The *small firm size effect*?	
	v) How do you evaluate the performance of Islamic fund(s) under your management?	
	vi) Do you use the standard portfolio valuation method such as the Sharpe ratio, the Treynor measure or the Jensen-alpha measure to evaluate your Islamic fund(s)?	
	vii) What is the benchmark that you use as comparison when assessing the performance of your Islamic fund(s)?	
5	***Questions related to your perception towards the need for an alternative fund valuation method specifically to measure Islamic fund performance:***	
	i) Do you think that an Islamic fund has a distinguished return and risk profile as compared to a conventional/unrestricted fund?	
	ii) Do you think that the *Shariah* restrictions on asset selection have significantly reduces the asset selection universe of an Islamic fund?	
	iii) Do you think that due to the limited asset selection universe, Islamic fund will not be able to attain portfolio optimality or efficiency?	
	iv) Do you agree to the claim that by limiting the asset universe for Islamic investment portfolio to *halal* (permissible) securities, the *Shariah* restrictions may have adversely affect the performance of an Islamic fund?	
	v) In your opinion, what is the main weakness or disadvantage (if any) of the standard portfolio measurement models when they are applied to evaluate an Islamic investment portfolio?	
	vi) Given the fundamental differences between Islamic fund and conventional fund, do you think that the conventional portfolio valuation methods which were designed based on conventional portfolio valuation theory are also accurate for evaluating Islamic fund?	
	vii) In your opinion, why do you think that there is no specific portfolio valuation method that has been developed to measure the performance of Islamic fund?	

5	viii) Considering the uniqueness of Islamic investment, do you think that Islamic fund requires a specific portfolio valuation method that take into consideration the fundamental differences of Islamic fund and hence, would provide accurate valuation on the performance of Islamic fund?	
	ix) If such a specific portfolio valuation method is to be developed, what factors (variables) do you think should be taken into consideration and be incorporated into the valuation model?	
	x) Do you think the way Islamic finance industry is moving by mimicking conventional products is the right way forward?	

APPENDIX IV

CODING ANALYSIS: INTERVIEW REPLY SUMMARY SHEET

Focused Coding	Research Question and Properties	1st Level / Pattern Codes	Question	Response	FMC 1	FMC 2	FMC 3	FMC 4	FMC 5	FMC 6	FMC 7
Q1	**What are the general characteristics of the funds and the investors?**	**CHAR**									
Q1FC1	CHAR: Staff expertise/qualification	CHAR-EXPT-	1.1, 1.2	PG-Shariah.							
				UG-Shariah.							
		PGNON		PG-Non Shariah.				X	X	X	X
		UGNON		UG-Non Shariah.	X	X	X	X	X	X	X
Q1FC5	CHAR: The size of Islamic funds relative to conventional funds.	CHAR-SIZE-	1.4								
		BIG		Bigger.				X	X		
		SMALL		Smaller.		X	X			X	X
		NA		Not applicable.	X						
Q1FC2	CHAR: Fund type	CHAR-TYPE-	1.5, 1.6, 1.7								
		SHAR		Shariah only.	X						
		MIXED		Mixed.		X	X	X	X	X	X
Q1FC3	CHAR: Client's profile	CHAR-CLIENT	1.3, 1.8								
		ALM		All Muslims.	X						
		MIX		Mixed.		X	X	X	X	X	X
		LT		Long-term.		X	X	X	X	X	X
		INST		Institutions.	X			X			X
Q1FC4	CHAR: Motivation to invest	CHAR-MOTI-	1.9								
		RELIG		Religious.	X	X	X	X	X	X	X
		RR		Return/Risk.		X	X	X	X	X	
		DIVERS		Diversification.			X				
		ETHIC		Ethical.		X				X	
		DIRECT		Directive (esp. insti'nal)							X
	Motivation to offer	CHAR-MOTO-	1.10								
		UMMA		Benefit for the *ummah.*	X			X			
		ECON		Economics (demand).	X	X	X	X	X	X	X
		INHER		Inherit.					X		

Q2	Are the current practices of the Islamic unit trust fund entirely Islamic-based?	PRAC									
Q2FC1	PRAC: Shariah principles applied with regards to FM-FMC-UH relationships	PRAC-CONT-BNAQ	2.1, 2.4	Ba'i an-naqdi (buying and selling using cash).	X						
		WADIA		Al-wadiah (safe keeping).	X						
		WAKA		Al-wakalah (represent.).	X						
		FEE		Fee based (Al-ujr).	X	X	X	X	X	X	X
		DNTKN		Resp. doesn't know.		X	X	X	X	X	X
		WAAD		Al-Wa'ad							X
Q2FC2	PRAC: Shariah principles applied with regards to deposit keeping.	PRAC-DEP-WADIA	2.2	Al-wadiah.	X			X			
		ASUWAD		Not stated – assumed as al-wadiah.		X	X		X	X	X
Q2FC3	PRAC: Are the operations of Shariah funds segregated from non-Shariah funds.	PRAC-SEGR-YES	2.5	Yes.		X	X	X	X	X	X
		NA		Not applicable.	X						
Q2FC4	PRAC: Is the dividend income purified?	PRAC-PURI	2.3, 2.6, 2.7	No.		X	X		X	X	
				Yes – to charity.	X		X	X	X	X	X
				Yes – into own funds.		X					
	PRAC: Purification process explained in prospectus?	PRAC-PUREX		Yes			X	X	X	X	
				No	X	X					X
Q2FC5	PRAC: Types of instruments invested in.	PRAC-INST-EBCMM	2.8, 2.10	Instru.: Equities, bonds, cash, money market etc.	X	X	X	X	X	X	X
		DERVY		Derivative – Yes.		X	X		X		X
		DERVN		Derivative – No.	X		X	X		X	
		VARIES		Proportion – Varies.	X	X	X	X	X	X	X
				Proportion – Fixed.							
Q2FC6	PRAC: Is the Islamic funds being managed by similar FMs who manage non Islamic-based fund?	PRAC-FM	2.9								
		YES		Yes.		X	X	X	X	X	X
		NO		No.							
		NA		Not applicable.	X						
	PRAC: Allow non Muslim IMs to manage Islamic fund.	NMYES		Yes.		X	X	X	X	X	X
		NMNO		No.	X						

Q3	**How the Shariah monitoring and supervision is being undertaken?**	**MONI**									
Q3FC1	MONI: Are the fund's operation entirely Shariah compliant?	MONI-COMP- YES PART	3.1	 Yes. Partly.	 X	 X	 X	 X	 X	 X	 X X
Q3FC2	MONI: Does the company have a Shariah advisory board?	MONI-SAB- INT EXT	3.2	 Yes – own board. Yes – 3rd party (sharing).	 X (3)	 X(4)	 X(4)	 X(4) (BIMB)	 X(3) (IBFIM)	 X(3) (IBFIM)	 X(3) (IBFIM)
Q3FC3	MONI: The primary role of SAB.	MONI-ROLE- SHAR	3.4	Merely advising on Shariah matters ONLY.	X	X	X	X	X	X	X
Q3FC4	MONI: How the Shariah checking is done?	MONI-CHEK- QTRM SFCHK	3.5, 3.6, 3.7	 Regular meeting (Qtr). Self-checking by FMs.	 X X	 X	 X	 X	 X	 X	 X
Q3FC5	MONI: Dependency on the SC list of approved stocks.	MONI- SCLIST-YES	3.8	Yes.	X	X	X	X	X	X	X
Q4	**The performance of Shariah fund.**	**PERF**									
Q4FC1	PERF: How do you rate your Islamic-based fund performance?	PERF-RATE- OUTBEN UNDER	4.1	 Outperform benchmark. Underperformed conv.	 X	 X	 X	 X	 X	 X	 X
Q4FC2	PERF: Comparison between Islamic and conventional fund performance.	PERF-COMP- DIFFER NODIF LTSIM STDIF	4.2	 There is difference. There is no difference. Long term – similar. Short term – different.	 X	 X	 X	 X	 X	 X X	 X
Q4FC3	PERF: Main factors affecting performance	PERF-FACTOR ALLO TIME PICK MKT STGY SHFE	4.3	 Asset allocation. Timing. Stock selection. Market condition. Tactical strgy/Execution Shariah fees.	 X X X	 X	 X X X	 X X	 X X X	 X	 X X

Q4FC4	PERF: Criteria used for asset allocation and selection of stock and industry.	PERF-ALLOC- LRGE GDFTL NOSM	4.4	 Big cap, high liquidity. Good fundamental. Smallcap not preferred.	 X X X	 X X	 X X	 X X	 X X	X X	 X
Q4FC5	PERF: Does the company do self-valuation?	PERF-SELVAL YES NO 3PTY	4.5	 Yes. No. 3rd party – Lipper.	 X X	 X X	 X X	 X X	 X X	 X	 X
Q4FC6	PERF: Does the company uses the three standard portfolio valuation methods?	PERF-STDVAL YES NO	4.6	 Yes. No.	 X	 X	 X 	 X	 X	 X 	 X
Q4FC7	PERF: What is the benchmark used for valuation?	PERF-BENCH SHIDX FDIS FDCV KLCI	4.7	 FBM Emas Shariah Indx. Al-Mudharabah GIA. Conventional GIA. KLCI.	 X X 	 X X 	 X X	 X 	 X X	 X X	 X X X
Q5	**Do we need alternative portfolio valuation model for Islamic funds?**	**ALT**									
Q5FC1	ALT: Are return and risk characteristics of Islamic funds significantly different from conventional funds?	ALT-RRCHAR SAME DIFF	5.1	 Similar. Different.	 X 	 X 	 X 	 X 	 X 	 X	 X
Q5FC2	ALT: Shariah restrictions reduces assett universe for Islamic funds.	ALT-REDUNI- YES NO	5.2 & 5.3	 Yes. No.	 X 	 X	 X	 X	 X	 X	 X
Q5FC3	ALT: Shariah restrictions reduces Islamic funds performance – cost of discipleship hypothesis.	ALT-REDRET YES NO	5.4	 Yes. No.	 X 	 X	 X	 X	 X	 X 	 X
Q5FC4	ALT: Shortfall in the existing fund valuation model when used to measure Islamic funds.	ALT-SHTFAL- RELIG NOSHF	5.5	 Religious/Shariah elem. No shortfall (can be used for Islamic and conv).	 X 	 X	 X	 X	 X	 X	 X
Q5FC5	ALT: Are the conventional portfolio valuation models suitable for Islamic funds?	ALT-SUIT- YES PROBLY	5.6	 Yes. Probably.	 X	 X 	 X 	 X 	 X 	 X 	 X

Q5FC6	ALT: Why there is no alternative portfolio valuation method developed for Islamic funds?	ALT-WHYES- INGRO IDNTY ACAD ALT-WHYNO- NOND NOINF NODD EXOK	5.7 & 5.8	Yes, because: - Industry is growing - Need for an identity - For academic purpos No, because: - Not needed/practical. - Lack of infrastructure. - Lack of demand - size - Existing valuation models are sufficient.	 X X X 	 X X	 X X X X	 X X X	 X X 	 X X	 X X
Q5FC7	ALT: What factor should be incorporated into an Islamic portfolio valuation model?	ALT-ADDVAR SHA RAT INT CSR NOS	5.9	 Shariah element. Shariah rating. Intention CSR practices. No suggestion.	 X X X 	 X 	 X 	 X X 	 X 	 X	 X

NOTE:
N.E : Not explicitly mentioned